A Changing Society:

The Pedagogical Climate in which Mauritian Children Grow Up

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Abstract

Although the Mauritian government aims at making a transition into a knowledge based economy, little is known about whether the pedagogical climate surrounding children in Mauritius contributes to their academic achievement and the development of the 21st century skills. According to Bronfenbrenner's Ecological Systems Theory different socialising agents at multiple levels can contribute to optimal child development. The aim of this explorative baseline research was therefore to provide the Ministry of Education with descriptive information about whether or not child rearing practices in the pedagogical climate at micro and meso level contribute to the macroeconomic goal. Because constructivist classrooms, authoritative child rearing approaches and a robust educative and pedagogical civil society are prerequisites for optimal child development, this mix-method study researched these aspects in five districts while making a distinction between advantaged and disadvantaged communities. Data were collected from a sample of headmasters (n = 5), teachers (n = 88), parents (n = 268) and children aged eight to ten (n = 155). Findings showed that the climate did not fully contribute to optimal child development because of a pedagogical mismatch between child rearing approaches at home and at school. This was especially the case amongst the disadvantaged communities, where the civil society was even less robust than in advantaged communities. This indicates that change is required to provide children with a pedagogical climate in which they can optimally develop into critical citizens that can adapt to their changing society, because of the transition into a knowledge based economy.

Keywords: Mauritius, constructivism, authoritative, authoritarian, teaching, parenting, educative and pedagogical civil society

Samenvatting

Hoewel de Mauritiaanse overheid het doel heeft een transitie te maken naar een kenniseconomie, is weinig bekend over de vraag of het pedagogisch klimaat rondom Mauritiaanse kinderen bijdraagt aan hun schoolprestaties en de ontwikkeling van de *21st century skills.* Volgens Bronfenbrenner's Ecologische Systeemtheorie kunnen verschillende opvoeders op meerdere niveaus een bijdrage leveren aan optimale ontwikkeling van kinderen. Daarom is het doel van dit explorerende onderzoek om het Ministerie van Onderwijs te voorzien van informatie die beschrijft of opvoedpraktijken in het pedagogisch klimaat op micro- en mesoniveau bijdragen aan het macro-economische doel. Omdat constructivistische

klassen, autoritatieve opvoedstijlen en een stevige pedagogische *civil society* voorwaarden zijn voor een optimale ontwikkeling van kinderen, heeft deze *mixed-methods* studie deze aspecten onderzocht in vijf districten, waarbij een onderscheid gemaakt werd tussen welgestelde en achtergestelde gemeenschappen. Data werden verzameld in een steekproef van schooldirecteuren (n = 5), leerkrachten (n = 88), ouders (n = 268) en kinderen van acht tot tien jaar oud (n = 155). Bevindingen laten zien dat het klimaat niet geheel bijdraagt aan een optimale ontwikkeling van kinderen, vanwege de pedagogische *mismatch* tussen de pedagogische benaderingen thuis en op school. Dit was vooral het geval in de achtergestelde gemeenschappen, waar de pedagogische *civil society* tevens nog minder robuust was dan in de welgestelde gemeenschappen. Dit impliceert dat verandering noodzakelijk is om kinderen te voorzien van een pedagogisch klimaat waarin zij zich optimaal kunnen ontwikkelen tot kritische burgers die zich kunnen aanpassen aan hun vanwege de transitie naar een kenniseconomie veranderende maatschappij.

Sleutelwoorden: Mauritius, constructivisme, autoritatief, autoritair, onderwijs, opvoeding, pedagogische civil society

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Since its independence in 1968, Mauritius has established a stable democracy and makes steady progress in economic growth (Bertelsmann Stiftung, 2014; Carroll & Carroll, 2008). More recently, Mauritius is changing from an agricultural and industrial society into a knowledge based society (Ministry of Tertiary Education, Science, Research & Technology, 2013). To further instigate this economic change, the Mauritian Ministry of Education and Human Resources, Tertiary Education and Scientific Research (MoES) proposed the Tertiary Education Strategic Plan (TESP) (Ministry of Tertiary Education, Science, Research & Technology, 2013). TESP is a developmental plan aimed at transforming Mauritius into a knowledge based economy. It outlines ambitious plans to improve the tertiary educational system, which would serve as the primary means for reaching the goal of becoming a knowledge hub.

In 2015, a team of international consultants was hired by the Delegation of the European Union in Mauritius to support the MoES with an *Action Plan* for the TESP (Van `t Rood cs, 2015). In this budgeted and implementable plan, the consultants advise the MoES on how to improve the educational system in order to become a knowledge based economy. A central recommendation made by the consultants is that addressing only tertiary education will not be sufficient if Mauritius aims to become a knowledge based economy. If optimal academic achievement is a focus of the government, the quality of primary and secondary education needs to be addressed as well. Therefore it is of crucial importance to critically evaluate the current quality of the education provided in Mauritian government schools, from primary education onwards.

TESP identifies education as the most important agent for change, but a condition to generate significant impact on the economy is that youth is provided with *quality education* (Van `t Rood cs, 2015). Quality education should promote academic achievement, but it should also *empower*, which means it should enable students to become critical citizens that take control over their own lives and resources (e.g., Freire; 1979, Van `t Rood, 1996). In other words, quality education should ensure that all learners take ownership over their own learning process, and that all learners get the opportunity to develop knowledge, skills and attitudes that are a necessity for adapting to a globalizing world, and to Mauritius' changing society (Ministry of Tertiary Education, Science, Research & Technology, 2013). This implies that not only academic achievement and subject related competencies are required to

reach the economic ambition.

Next to academic achievement and subject related competencies, personal and social competencies also play a crucial role in ensuring quality education. The Action Plan for TESP proposes more attention in education for the development of these personal and social competencies: the *21st century skills* (Van `t Rood cs, 2015). These include critical thinking and problem-solving skills, which are prerequisites for people to adapt to a society that is making a transition into a knowledge based economy. To promote these skills and attitudes, research shows education should take a *constructivist* approach (e.g., Pinquart, 2015; Van `t Rood cs, 2015).

When working from a constructivist approach, learners construct knowledge through social interaction (e.g., Johnson, Johnson, & Stanne, 2000; Vygotsky, 1978). In contrast to the traditional *banking model* of education, where the teacher deposits and the student is passively receiving, constructivism challenges the learner to be an active participant who is able to reflect and to critically co-investigate, while cooperating in dialogue (Freire, 1979; Pinquart, 2015). In contrast to teacher-centred, a constructivist classroom is learner-centred. The instruction of the teacher is not the central focus of the lesson, but the teacher shifts the attention to the learning process of the student in order to make him an autonomous and independent learner. Thus, a constructivist, learner-centred classroom will help students develop the skills that are a necessity for lifelong critical thinking and independent problem-solving (e.g., Marzano & Heflebower, 2012; Vygotsky, 1978; Walker, 2008).

To create a learner-centred and constructivist classroom, a teacher is required to practice an authoritative teaching style (Freire, 1979; Ro'iste, Kelly, Molcho, Gavin, & Gabhainn, 2012). Researchers argue student-teacher interaction might be one of the most crucial factors in providing quality education (Ro'iste et al., 2012). Whereas *authoritarian*[1] approaches undermine children's agency, autonomy and independence, *authoritative*[2] approaches contribute to better academic achievement, a higher motivation, autonomy and independency. Therefore, authoritarian teacher approaches hinder the development of 21st century skills, while authoritative approaches contribute to the development of these skills.

However important classroom environment and teaching style may be for enhancing academic achievement and developing 21st century skills, the school is not the only agent

[1] Negative reinforcement; a high level of control, and a low level of warmth.
[2] Positive affirmation; a high level of control, and a high level of warmth.

affecting this development. According to Bronfenbrenner's Ecological Systems Theory multiple socialising agents on micro, meso and macro level influence the learning process of children (Bronfenbrenner, 1979). Each of these systems inevitably interact with each other, which is why addressing socialising agents in the other systems is a necessity for optimal success in the transition into a knowledge based society.

Other main socialising agents in the lives of children are, of course, their parents. Research shows parenting style is one of the most important factors affecting academic achievement (Masud, Thurasamy, & Ahmad, 2015). As for teachers, an authoritative parenting style benefits academic achievement and the development of 21st century skills, whereas an authoritarian parenting style might even counteract this development (e.g., Brown & Iyengar, 2008; Gray & Steinberg, 1999). Furthermore, if children are presented with authoritative approaches at micro level, in both families and school, this will make the *pedagogical climate* they grow up in more coherent (De Winter, 2012). A coherent pedagogical climate could in turn be beneficial for academic achievement. It is therefore of crucial importance for the development towards the knowledge hub to provide children with a coherent, authoritative, pedagogical climate (Moritsugu, Vera, Wong, & Duffy, 2014).

But, as Bronfenbrenner's theory appoints, not only parents and teachers are the creators of the pedagogical climate surrounding children (Bronfenbrenner, 1986). At meso level, the community children live in is also an important socialising agent (De Winter, 2012). The community children grow up in could benefit but also harm their academic performance (McLoyd, 1998). For children in more advantaged communities, the community can be a rich source of learning opportunities. But for children in more disadvantaged[3] areas, the neighbourhood could be a predictor for lower levels of school achievement. This should be taken into account in the transition Mauritius is making, because even though the economy has grown, this has not equally improved the living standards for all Mauritians (Boswell, 2006).

The inequality between minority- and majority groups may be an obstacle for Mauritius in becoming a knowledge driven economy. In Mauritius, not all children have equal opportunities for developing in education, because "learning for all does not mean learning opportunities for all" (Griffith, 1998). Especially children from the disadvantaged, socially

[3] Characterised by a low socioeconomic status, poverty, and a reduced accessibility to jobs, public and private services, and informal social support (McLoyd, 1998).

marginalized communities show poorer performance at school. With this, a valuable economic resource gets lost: social capital (De Winter, 2012).

This Research

In order to achieve the macroeconomic goal proposed in the TESP by the Mauritian MoES, it is of crucial importance to gain insight in the current educational and pedagogical climate at meso and micro level. But research on child rearing practices in Mauritius is scarce. In order to fill this knowledge gap this explorative baseline research will provide the Mauritian MoES with descriptive information about the pedagogical climate in which Mauritian primary school-aged children grow up.

In this research the pedagogical climate will be analysed at the three levels of Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1979). At macro level, the goals in the TESP are the fundaments on which this research is based. To gain a deeper understanding of the pedagogical climate at meso level, multiple child rearing practices at micro level will be analysed. The main question to be answered is: "Does the pedagogical climate in which Mauritian primary school-aged children grow up contribute to their academic achievement and the development of 21st century skills?" In order to answer this question, multiple sub questions about educational and parenting practices in more advantaged and more disadvantaged communities will have to be answered first:

1. To which extent are classroom environments in Standard V classrooms in Mauritian government schools constructivist?
2. Is the teaching style in Standard V classrooms in Mauritian government schools more authoritarian or more authoritative oriented?
3. Is the parenting style of Mauritian parents of primary school-aged children more authoritarian or more authoritative oriented?
4. Do parents, teachers and headmasters feel there is an educational and pedagogical civil society in their community in Mauritius?
5. Is there a difference in classroom environment, teaching style and parenting style between more advantaged and more disadvantaged communities in Mauritius?
6. Are primary school-aged children in Mauritius raised in a coherent pedagogical climate?

Theoretical Framework

Context of this Research

The context of the island Mauritius. Eight hundred kilometers from Madagascar and 1800 kilometres from the African mainland lies the island Mauritius in the middle of the Indian Ocean. Over the past centuries, Mauritius has gone through waves of colonization, with sequential British and French marks of language and culture still prominent on the island (Bhowon & Bhowon-Ramsar, 2012). In 1968, Mauritius became independent of the British colonizer, and the country became a republic in 1992.

Since its independence, Mauritius has evolved into a multi-ethnic society with 1.2 million inhabitants (Owodally, 2014). The current social, political and economical life has been largely determined by people of Indian origin (Bhowon & Bhowon-Ramsar, 2012). Still, Mauritius is an extremely heterogeneous country with a 52% Hindu population, 27% Creole population, 16% Muslim population, and the smallest group of 2% consists of Europeans (Laville, 2000). The division of labour and economic and political resources is still highly correlated with ethnic membership (Laville, 2000).

Mauritius had transformed from an economy entirely based on sugar export into a flourishing, newly industrialized country. The island has been cited *The Miracle of Africa* for its growing tourism and IT-sectors, while maintaining its cultural, ethnic and linguistic diversity (e.g., Bhowon & Bhowon-Ramsar, 2012; Laville, 2000). Even though the economy has grown, this has not equally improved the living standards for the disadvantaged minority group, as much as it has for the majority of Mauritians (Sobhee, 2009). Some researchers argue especially the Creole community is still marginalized, despite the economic development (e.g., Sobhee, 2009; Sundman, 2013).

Primary education in Mauritius. Primary education in Mauritius is free. About 95% of Mauritian children enrol in primary school (Griffith, 1998). Pupils enter at the age of five and go through six years of schooling before they sit for the Certificate of Primary Education (CPE). The CPE results are used to rank pupils for places in secondary schools, with only good rankings ensuring a place in a highly rated secondary school.

Scientific research describing the current situation in primary education in Mauritius is scarce (Griffith, 2000). In 1998, the Griffith's study analysed primary education in Mauritius, concluding that classrooms are teacher-centred and teaching is authoritarian by nature

(Griffith, 1998). Teachers are the dominant providers of information, they are "teaching the class - not pupils" (Griffith, 2000). Education is a *Three R-type* with a focus on recipient, repetition and recall-learning, therefore exposing children to a traditional banking model of education (Freire, 1979; Griffith, 2000).

The banking model of education implies pupils are mainly presented with knowledge that will enable them to finish the CPE successfully, but not with skills and attitudes that are a necessity for continuous learning throughout life (Freire, 1979; Griffith, 2000). Furthermore, teaching in primary education is geared towards "able" and academically successful pupils, lacking attention for students not fitting the norm. However, these findings are from the late 90's and therefore might not be entirely up to date. The current practices in Mauritian schools might have changed and modernised over time.

More recently, research has been conducted to evaluate specific Mauritian educational policy (Kumar & Gurrib, 2008). The findings from this research indicate that many children in Mauritius experience learning difficulties, especially children from the disadvantaged areas. Since education is a key focus in Mauritian politics, the government has launched Zones d'Education Prioritaire (ZEP) in attempt to attack these learning problems. In ZEP-schools, government tries to improve educational quality by inspiring traditional schools in disadvantaged communities with educational and pedagogical innovations.

The main aim of ZEP is to provide children from disadvantaged communities with a stable, coherent civil society where school, parents and social institutions are closely cooperating. However, in 2008, the ZEP-project had not significantly increased CPE results (Kumar & Gurrib, 2008). An explanation for this might be that "education for all does not necessarily translate in learning opportunities for all" (Griffiths, 2000), if education is still traditional and mainly focuses on the "good students".

Because the research on education in Mauritius is scarce and might be outdated, the Primary Curriculum Framework might give more insight in the current situation in Mauritius' government schools. The Primary Curriculum Framework outlines plans per age-group and overarching goals for the six years of primary schooling (Primary Curriculum Framework, 2015). In order to improve educational quality, it emphasises the importance of replacing the current competitive system by a new, less competitive system by using a new educational approach.

From 2016, this new approach will be implemented in primary schools in Mauritius as

the *nine year-schooling system* (Primary Curriculum Framework, 2015). Instead of six years, primary education will be nine years. According to the policy plans, this system will focus more on holistic child development instead of academic achievement measured by tests and exams. The CPE will be eliminated in order to make primary education less competitive.

In the new approach, the nine year-schooling, there is not only attention for subject-related knowledge, but also specific attention for the development of interpersonal knowledge, fundamental life skills and the strengthening of positive attitudes. The main aim of developing this knowledge, skills and attitudes is to prepare students to become good citizens, with "social values, thinking skills and problem-solving skills" (Primary Curriculum Framework, 2015). These skills are – even if not called exactly so – the 21st century skill.

What is Quality Education?

Quality education promotes 21st century skills. Unlike the name suggests, 21st century skills are not new. In fact, the mastery of skills such as critical thinking and problem-solving have been a prerequisite for development for centuries (Rotherham & Willingham, 2009). What is new, however, is that educational policy worldwide is more deliberate about teaching critical thinking, collaboration and problem-solving skills (Cogan & Derricott, 2012). The same holds for the educational policy in Mauritius.

Mauritius is changing from an agricultural and industrial society into an information- and knowledge based society, and consequently the labour market is asking for a different kind of expertise, like the growing importance of the ability to use so-called soft skills, such as good cooperation (Voogt & Roblin, 2010; Rotherham & Willingham, 2009). This change causes a shift in the kind of jobs available to the Mauritian population. This implies students are being educated for jobs that might not even exist yet.

To prepare youth to adapt to these changes in the labour market, schools need to enable them to develop competencies that are required to adjust to this changing labour market (Voogt & Roblin, 2010). These competencies are the 21st century skills, defined as cooperating, communicating, ICT-literacy, critical citizenship and social skills (Voogt & Roblin, 2010; Van `t Rood, 2015). Research shows that the development of the 21st century skills require a classroom where they can be practiced (Cogan & Derricott, 2012).

Practicing 21st century skills such as critical thinking requires a specific classroom environment (Marzano & Heflebower, 2012). Children need to be presented with a learner-

centred classroom, where they feel safe enough to voice out their opinions (Walker, 2008). Teacher approaches that allow this kind of safety, are authoritative by nature (Ro'iste, Kelly, Molcho, Gavin, & Gabhainn, 2012). Thus, to enable students to develop 21st century skills, classroom environment and teaching style play a crucial role.

Quality education implies constructivist learning. To enable students to develop the 21st century skills, classrooms should be learner centred and thus constructivist (e.g., Marzano & Heflebower, 2012; Ro'iste et al., 2012; Walker, 2008). Constructivism has been both a theory and a paradigm for learning (Hua Liu & Matthews, 2005). There has been a large amount of research describing the positive effects of constructivist learning methods on academic achievement (e.g., Johnson et al., 2000; Pinquart, 2015). As the term constructivism implies, learners *construct* knowledge through social interaction.

According to the patriarch of modern social constructivism, Lev Vygotsky (1896-1934), the social interactions between learners and their environments is a key factor for development (e.g., Li & Lam, 2005; Vygotsky, 1978). Vygotsky assumes the development of individuals is a result of culture and the societal context, where learners are active participants in their learning process, while constructing knowledge in cooperation with others. In the context of a school, practicing constructivism means cooperative learning (Johnson et al., 2000). All students can achieve their own personal goal if, and only if, they take responsibility for the learning process of themselves and the learning processes of the other group members, meaning that they acquire ownership over their own learning process (Johnson et al., 2000; Li & Lam, 2005). Thus, according to social constructivist theories, social and individual processes in the co-construction of knowledge are interdependent (Palincsar, 1998).

In a classroom where children are actively co-constructing knowledge, to achieve growth, "the only good learning is that which is in advance of development" (Vygotsky, 1978). This is the construct of the Zone of Proximal Development (ZPD). It is a way of guidance where a child learns skills too difficult for him/her to master on his/her own, but that can only be done with guidance of a more skilled person. For working in the ZPD, it is a prerequisite to work from the experience and perceptions of the learner (e.g., Johnson et al., 2000; Vygotsky, 1978). In other words, the mental framework of the learner is the starting point for learning processes. This can be done in interaction between teacher and student. But also in interaction between students reciprocally, because they share age-, development- and learning-related experiences and perceptions. Peer interaction enables students to place new,

challenging learning content in a personally-relevant context. In contrast to the traditional banking model of education, where the teacher deposits and the student is the passively receiving, memorizing and repeating depository (rote-learning), constructivism challenges the learner to reflect and to critically co-investigate while cooperating in dialogue (Freire, 1979).

Even when taking into account the amount of research on constructivism, it still is an abstract concept (Hua Liu & Matthews, 2005). However, researchers have operationalised constructivism into five concepts to indicate the extent to which constructivist teacher approaches take place in a classroom (Nix, Fraser, & Ledbetter, 2005; Taylor, Fraser, & Fisher, 1997; Johnson & McClure, 2004). According to these researches, the term constructivism in the classroom can be operationalised into a) *personal relevance*, b) *critical voice*, c) *shared control*, d) *student negotiation* and e) *uncertainty*.

First, personal relevance refers to the relevance of learning to the lives of the learner (Nix et al., 2005). If the topics covered are relevant to a student, this results in an enhanced motivation and therefore in higher academic achievement (Johnson et al., 2000; Li & Lam, 2005). To achieve personal relevance in a classroom, learning should be related to students' everyday out of school experiences (Johnson & McClure, 2004).

Second, critical voice refers to the legitimacy of expressing a critical opinion (Nix et al., 2005). If students are enabled to think critically of a given situation in the classroom and gets an opportunity to express their critical opinion, this contributes to active and critical citizenship. This in turn contributes to democratic skills and empowerment of the individual (e.g., De Winter, 2012; Freire, 1979; Van `t Rood, 1996). To achieve critical voice, students must feel it is legitimate and beneficial to question teachers' pedagogical approaches, teaching plans and learning methods (Johnson & McClure, 2004).

Third, shared control refers to the participation of students in planning, conduct and assessment of learning (Nix et al., 2005). If students have appropriate influence and impact in their schools and classroom, this might lead to higher perceptions of student involvement. Student involvement, in turn, is strongly related to school satisfaction and with this to academic achievement (Ro'iste et al., 2012). To achieve shared control, students must have opportunities to explain and justify their ideas and to test the viability of their own and other student's ideas (Johnson & McClure, 2004).

Fourth, student negotiation refers to student involvement with teachers and peers in assessing the viability of new ideas (Nix et al., 2005). There is a large amount of scientific

evidence that these methods of cooperative learning, built upon heterogeneity, formalise and encourage the connections between students (Li & Lam, 2005). This is strongly related to school satisfaction and therefore contributes to academic achievement (Johnson et al., 2000). To achieve student negotiation, students share control with their teacher and peers in the design and management of learning activities and the social norms of the classroom (Johnson & McClure, 2004).

Finally, uncertainty refers to the provisional status of scientific knowledge (Nix et al., 2005). Decisions in today's changing society are no longer black or white, or right or wrong. The abilities of innovative critical thinking about the bigger societal picture and developing creative problem-solving skills is a requirement for success in a modern, knowledge driven society (Nix et al., 2005; Van `t Rood cs, 2015). To achieve uncertainty, students must learn that knowledge is evolving and culturally and socially determined (Johnson & McClure, 2004).

The evolvement of knowledge is part of the aim of the Mauritian government to become a modern, knowledge driven society (Ministry of Tertiary Education, Science, Research & Technology, 2013). As the large body of scientific research suggests, the application of constructivist learning in schools is a promising approach to achieve this (Johnson et al., 2000). It is this promising because cooperative learning leads to higher academic achievement and also promotes critical citizenship and empowerment (e.g., Freire, 1979; Johnson et al., 2000). Additionally, cooperative learning promotes 21st century skills such as accountability and organisational skills, cooperation skills and leadership skills (Van `t Rood cs, 2015). These are all means that will benefit a knowledge driven economy in Mauritius.

Quality education implies an authoritative teaching style. Recent studies show evidence of the importance of teachers' responsiveness, consistent control and autonomy support in the classroom on positive student outcomes (Walker, 2008). When looking at teaching style through the lens of parenting style, research showed that students with the best academic and social competencies were students who had an authoritative teacher. In contrast, amongst students who had an authoritarian teacher the academic and social competencies were less developed. This indicates that teaching style should be authoritative, to provide children with quality education in order to reach maximum academic achievement and development of the 21st century skills (Johnson et al., 2000; Walker, 2008).

Authoritative teachers practice consistent classroom management. Furthermore, they support the autonomy of students by allowing them to take ownership over their own learning process, and the authoritative teacher shows personal interest in the students (Walker, 2008). Because of this personal bond, authoritative teachers can create a classroom where the perspective of the child is the starting point of learning (e.g., De Winter, 2012; Freire, 1979; Van `t Rood, 1996). This increases pupils' engagement in the classroom and in their own learning process and therefore enhances academic achievement (e.g., Ro'iste et al., 2012; Walker, 2008).

Authoritarian teachers, on the other hand, also practice consistent classroom management (Walker, 2008). However, the difference with authoritative teachers is that authoritarian teachers have limited support for the autonomy of the students, which does not allow a student to take ownership over their own learning process (e.g., Freire, 1979; Van `t Rood, 1996). An authoritarian teacher also does not invest in creating a strong, personal bond with students. Authoritarian teaching does not promote academic achievement as such, because it undermines children's agency and active participation (Walker, 2008). These findings are consistent with research outcomes describing the influence of authoritative and authoritarian parenting style on academic achievement (e.g., Pinquart, 2015; Walker, 2008).

Parenting and the Relevance for Academic Achievement

Recent studies associating parenting style with academic achievement concluded that parenting style is one of the most important factors affecting academic achievement (Masud et al., 2015). This is especially the case for primary school children (Jeynes, 2005), since they spent more time with their parents than adolescents in secondary or tertiary schools (Jeynes, 2007). Even though this relationship might be mediated by students' motivation, self-esteem and wellbeing in school (Lee, Yu, & Choi, 2012), the effect of parenting style on academic achievement is empirically well founded (Pinquart, 2015). Hence, parenting style is of great relevance for this research, since factors contributing to high academic achievement will indirectly benefit a knowledge driven society.

Over the past decades, many researches have identified two central aspects of parental behaviours based on Baumrind's theory of parenting styles (e.g., Baumrind, 1966; Maccoby & Martin, 1983; Pinquart, 2015). The levels of parental warmth/responsiveness and parental control/demandingness are a way to define parenting styles into a two-dimensional model.

The first dimension, warmth/responsiveness, involves support, warmth and care, being sensitive, accepting and nurturing, and adaptation to the individual needs of the child (Pinquart, 2015; Walker, 2008). The second dimension, control/demandingness, involves behavioural control and the amount of support for autonomy of the child (Walker, 2008). Furthermore, this dimension includes the communication of clear and consistent behavioural expectations, and punishment if the child's behaviour does not meet these expectations (Pinquart, 2015). Thus, the two-dimensional model for the identification of parenting styles is based on a high or low level of warmth and control.

Variations among these dimensions create different parenting styles (Walker, 2008). Each parenting style has far reaching consequences for the social and intellectual development of children. The first main parenting style, the authoritarian parenting style, is characterised by a high level of control and a low level of warmth (Pinquart, 2015). According to Baumrind (1966), an authoritarian parent "attempts to shape, control, and evaluate the behaviour and attitudes of the child in accordance with a set standard of conduct". Authoritarian parents value obedience and use punitive, coercive means to ensure the child accepts their parents' will (Brown & Iyengar, 2008). This parenting style is associated with lower academic achievement, since the practice of psychological control increases the internal distress and a focus on parental approval, rather than a focus on the learning process itself (Aunola & Nurmi. 2004).

The second main parenting style, the authoritative parenting style, is characterised by high levels of both warmth and control. (Pinquart, 2015). According to Baumrind (1966), an authoritative parent "encourages verbal give and take, and shares with the child the reasoning behind the policy". Authoritative parents share their adult perspective with the child, while recognising the child's developmental level, individuality and autonomy (Brown & Iyengar, 2008). This parenting style is related to higher academic achievement, because of it's balanced recognition of both the ability to behave conform expectations and the child's autonomy (e.g., Darling & Steinberg, 1993; Pinquart, 2015). Another three components are held accountable for the positive effects of authoritative parenting: the high demands, the firm behavioural control and the responsiveness in parent-child interaction (Brown & Iyengar, 2008). Furthermore, it is linked to adaptive achievement strategies, independent problem-solving skills and critical thinking, which promote academic achievement (Gray & Steinberg, 1999).

Although the evidence for the authoritative parenting style contributing to academic achievement is very well-founded, cautiousness is stressed for the relevance of this theory in the Mauritian context. The studies of parenting styles are mostly based on western samples, and do not necessarily coincide with parenting in this specific local context (Brown & Iyengar, 2008). However, researchers confirm the cross-culture existence of the authoritarian and authoritative parenting style, both in more collectivist as well as more individualist cultures (Sorkhabi, 2005). Still, there is no scientific literature determining which parenting styles are practiced in the context of Mauritius.

A solution to make Baumrind's theoretical framework relevant for the Mauritian context, is the use of the Integrative Model of Darling and Steinberg (1993). These authors involve the context of parenting style into their model, disentangling three different aspects of parenting that might differ per context. They make a distinction between 1) the goals toward which socialisation of children is directed, 2) the parenting practices applied by parents to help children reach those goals, and 3) the parenting style, or the emotional climate, within which socialisation occurs.

Furthermore, Darling and Steinberg (1993) make a clear distinction between parenting practices and parenting style. Parenting practices are defined by the specific context and local socialisation goals. The Integrative Model states that there is a moderation effect of parenting style on the effect of the specific parenting practices on the openness to socialisation of the child. This moderation effect knows two pathways. First, it directly forms the nature of the parent-child interaction, and second it indirectly influences the child's personality. Thus, the effect of parenting practices on the child differ for each parenting style, with the authoritative style contributing mostly to the child's openness to socialisation. A recent meta-analysis found evidence that specific parenting practices aimed directly at promoting academic achievement produce a larger effect on this achievement than general parenting styles (Pinquart, 2015).

A Civil Society and the Relevance for Academic Achievement

Literature about the context of Mauritius appoints reasons to assume children might experience a gap between home culture and school culture: a *cultural discontinuity* (e.g., Laville, 2000; Owodally, 2014). There are two arguments made to endorse this statement. First, a concern for local pedagogues is that almost all children that go to school in Mauritius

experience a language- and literacy shock when they first enter primary school (Owodally, 2014). English is the main language used in education but because it is hardly used socially, children have barely been exposed to this language at home. Second, apart from the multilingualism, Mauritius is a complex multi-ethnic and multi-religious society, which leads to differences in child rearing practices and experiences for children from different social groups (e.g., Laville, 2000; Owodally, 2014).

A gap between home culture and school culture could be problematic (De Winter & Kroneman, 2003). This is because the cultural environment in which the child grows up needs to be the starting point for learning (e.g., De Winter, 2012; Eisenhart, 2001; Van `t Rood, 1996). If language or the home culture does not match the dominant school language or culture, education might become irrelevant to the learner. For optimal child development, it is therefore essential to have at least some correspondence between language, values and norms in the different milieus in which children are brought up (e.g., Bronfenbrenner, 1979; De Winter, 2012; Van `t Rood, 1996).

Not only a gap in language, values or norms in different levels could influence child development (Bronfenbrenner, 1979). Living in a deprived area could also negatively influence child development, and a low socioeconomic status especially could have a negative impact on academic achievement (Sirin, 2005; White, 1982). Because of less access to resources and cognitive stimulation, children in more disadvantaged areas have less developed academic-readiness skills (McLoyd, 1998; White, 1982). Furthermore, disadvantaged neighbourhoods are characterised by less effective parenting styles (Byrnes & Miller, 2012). As explained, parenting style is strongly related to academic achievement, so living in a deprived area could indirectly negatively influence children's academic achievement through less effective parenting.

A strong and robust educative and pedagogical civil society (PCS) can be a way to tackle this problem. Integration of the school into the local community, with strong parental involvement, might lead to an increase of correspondence between child rearing approaches in both school and informal social environments in which children are brought up (De Winter, 2012; Fan & Chen, 2001). This in turn could increase academic-readiness. Therefore, a neighbourhood with a strong PCS could contribute to academic achievement (McLoyd, 1998).

The PCS, or a strong sense of community amongst citizens, is the cooperation

between parents in a neighbourhood and the intensive links between parents and schools, which form a collective, voluntary effort in child rearing (De Winter, 2012). Communities with a robust PCS promote the effectiveness of schools because these communities provide social capital: social networks and relations between adults and children that contribute to child development (Coleman, 1990; Hilhorst & Zonneveld, 2013). A strong link between communities with social capital and academic achievement has been found (Putnam, as cited in Ravtich & Viteritti, 2002). For this reason, strengthening communities, or the PCS, is a promising approach when aiming for a knowledge based economy, especially amongst the more disadvantaged areas where social capital is scarce.

Hypotheses

The aim of this research is providing baseline information about the pedagogical climate in which Mauritian school-aged children grow up. The research is descriptive, and the absence of recent research in Mauritius on parenting and the lack of research on education in Mauritius emphasise the importance of this descriptive research. Furthermore, the shortage of research in the Mauritian context gives no direct indications of what outcomes could be expected when researching child rearing approaches. Nevertheless, based on the generic literature, the following hypotheses can be formulated.

Amongst other topics, this research investigates teaching styles in Mauritius. The literature study shows that research in the Mauritian context concludes teaching styles are authoritarian (Griffith, 1998). However, this research might be out-dated. Since then, education has been a key focus in Mauritian government policy, and many attempts to improve educational quality have been made. The practices described by Griffith's in 1998 might have changed over time. Based on this, the first hypothesis is that "there is a mixture between more authoritarian teachers and more authoritative teachers".

Authoritarian teachers provide their students with a more teacher-centred classroom, and authoritative teachers create a more learner-centred classroom. The literature study shows that constructivist practices are only found in learner-centred, authoritative classrooms (e.g., Johnson et al., 2000; Vygotsky, 1978). Thus, based on the first hypothesis, the second hypothesis is "both constructivist classroom environments and classrooms without constructivist practices will exist in Mauritius".

Not only child rearing practices in education are relevant for child development,

parenting styles are also a predictor of academic achievement. Because research confirms the cross-cultural existence of both the authoritarian and authoritative parenting style (Sorkhabi, 2005), the third hypothesis is that "both authoritarian and authoritative parenting styles will exist in Mauritius". Furthermore, because there is a relationship between neighbourhood disadvantage and less effective parenting (Byrnes & Miller, 2012), the fourth hypothesis is that "parenting in the disadvantaged communities will be more authoritarian, while parenting in the advantaged communities is more authoritative". Finally, based on literature about social capital in disadvantaged areas (e.g., Coleman, 1988; Coleman, 1990), the last hypothesis is that "there is a stronger sense of community and thus a stronger PCS in the advantaged areas, than in the disadvantaged areas".

Methodology

Design

This research focused on child rearing practices in both education and families in a diverse sample of Mauritius' population and followed a both qualitative and quantitative methodology. In cooperation with the MoES a non-random convenience sample of five government primary schools were selected. To create a relatively representative sample, the five schools were from different districts, both rural and urban areas, and with populations with more advantaged and more disadvantaged backgrounds.

A permission letter has been sent to the five participating schools by the MoES, in which the research approval is subject to four conditions: a) no class will be disrupted while the survey is being carried out; b) participation will be strictly voluntary and at the discretion of the educators concerned and the headmaster of the school; c) the report of the outcomes of the study will be submitted to the MoES within one month after its completion; d) all findings will have to be kept confidential and anonymous. Careful attention was paid by the researchers to guarantee these conditions were met. As a final condition before conduct, the MoES approved all techniques for data-collection.

Participants and Procedure

Multiple methods including questionnaires, interviews, focus groups, classroom observations and children's drawings were used. The participants formed a sample of primary

school headmasters (n = 5), primary school teachers (n = 88), parents (n = 268) and primary school students aged eight to 10 (n = 155).

Headmasters. All five headmasters (three male, two female) of the participating schools were informed about the research by both the MoES and the researchers, and their informed consent was obtained. At each school, the data collection started with a half hour interview with the headmaster. The short interview was semi-structured with open ended questions. The interviewers continued to ask questions with the aim of getting in-depth insight in their perspective on quality education, values and the sense of community.

Teachers. All teachers at the participating schools (n = 88) filled in a questionnaire about their teaching style and their classroom environment. Of the participating teachers, 30.5% were male, and 69.5% were female teachers. They were between the ages of 20 and 65, with 46.6% between 31 and 40.

To gain in-depth insight in the answers given in the questionnaires, additional semi-structured interviews with seven Standard V teacher were held. The interviews consisted of statements derived from the questionnaire. Next to questionnaires and interviews, nine classroom observations were held. To obtain *triangulation*, the researchers used these three different techniques to find the answer to the question (Thurmond, 2001): which teacher approaches and classroom environments are common in Mauritian government primary schools?

Parents. All students in Standard V in the five schools were requested to hand out a letter for informed consent and two questionnaires on parenting styles to their parents or guardians. The questionnaire was handed out to 342 parents and returned by 268 parents; 43.3% of the participating parents or guardians were male, whereas 56,4% were female. Age ranged from 26 to 65 years. A majority of 86.6% of the parents was married at the time they filled in the survey, 4.1% had a domestic partnership, 0.7% was single, 4.8% was divorced or separated, and 3.4% reported to be widowed.

To gain in-depth insight in the answers given in the questionnaires, five semi-structured focus groups with parents (n = 13) were held. In the focus groups parents gave their opinion on statements that derived from the questionnaire. The interviewers continued to ask questions with the aim of getting a deeper understanding of parenting style, parenting practices, the goals towards which socialisation was directed, and their perspective on the sense of community (Darling & Steinberg, 1993).

Students. Students in Standard V (n = 171) were requested to hand out the parental permission form to their parents. Students (n = 155) whose parents gave permission for participation in the survey were requested to fill in a questionnaire about their perceptions of teaching style, classroom environment and parenting style in their home. Of the participating students, 54.2% were boys, and 45.2% were girls. Their age ranged from eight to 10 (M = 9.5, SD = 0.51). To gain more insight in the perspective of the child on their classroom environment, children were requested to do a mapping exercise: make a drawing of your classroom.

Qualitative Methodology

Central components of the research were interviews with headmasters and teachers and focus groups with parents, carried out at each school. Analysis of transcribed interview and focus group data was conducted in a coding scheme. Because the amount of data was relatively modest, both researchers could review each transcript individually after which they compared their codings. The percentage of agreement was 89.7%, which shows a high inter-rater reliability (Celestin-Westreich & Celestin, 2012). After comparison, the findings coded differently were discussed until consensus was reached.

Interviews headmasters. Five headmasters were interviewed (see Appendix A). The coding scheme of the interviews was divided into three main categories, with specific labels for each topic. The first category was “sense of community”, with labels such as *strong personal commitment* and *parents are not involved*. The second category was “quality education”, with labels such as *peer-learning* and *holistic development*. The last category entails the question “why do children go to school”, with accompanying labels such as *becoming a good citizen* and *escape poverty*. The final step of the analysis was to quantify the labels, which gave an indication of the underlying educational values of headmasters represented by each label.

Interviews teachers. Seven teachers were interviewed at the school they worked (see Appendix B). Six of these teachers worked in the disadvantaged community. Only one school in the advantaged community gave researchers the opportunity to do an interview, so only one teacher from the advantaged community participated.

The interviews consisted of six statements about either authoritarian or authoritative teaching styles and contained five statements about constructivism. These statements came

from existing questionnaires: the Swiss Teaching Style Questionnaire (STSQ) (Kuntsche, Gmel, & Rhem, 2006) and the Constructivist Learning Environment Survey (CLES) (Johnson & McClure, 2004). These statements were deliberately chosen to contribute to triangulation and to get a deeper understanding of the underlying values, based on the answers received. The last questions asked are about the sense of community and the possible existence of a PCS.

For the interviews with teachers, the coding scheme was divided into three main categories. The first category entailed "teaching style", which was determined by labelling comments as either *authoritarian* (e.g., limited autonomy support and limited personal interest in students) or *authoritative* (e.g., autonomy support and personal interest in students) (Walker, 2008). For example, the authoritarian style was coded when a teacher commented a class must be kept under control at all times without exception. Authoritative teaching was coded when a teacher reported it is also important to leave a class freely every now and then. The comments were quantified and weighed, to come to a conclusion if a teacher was more authoritarian or more authoritative oriented.

The second category entailed "constructivist practices and values" (e.g., student negotiation and personal relevance). For example, the presence of constructivism was coded when a teacher commented that students might learn more from their peers than from their teacher. A lack of constructivism was coded when a teacher reported they did not use peer learning in class because it was better if students ask questions to the teacher at all times. The final step of the analysis was to quantify the labels and weigh these, to indicate whether or not there were constructivist practices and values.

The last category was "sense of community", with two accompanying labels representing either a presence or a lack of the sense of community. For example, a presence of a sense of community was coded when a teacher reported to solve problems together with parents. A lack of a sense of community was coded when a teacher reported that parents do not communicate with them. The final step of the analysis was to quantify the labels and weigh these, to indicate whether or not there was a sense of community in the specific school.

Classroom observations. In addition to interviews with teachers, observations were done in nine Standard V classrooms. The first aim of the naturalistic observations was to gain a deeper understanding of teaching style, specifically whether the teaching style is more authoritarian or authoritative. The second aim was to get a better understanding of the

classroom environment and constructivist practices. The researchers paid specific attention to interaction between teacher and pupils and between pupils reciprocally, and to the presence of the five operationalised categories of constructivism: “personal relevance”, “critical voice”, “shared control”, “student negotiation” and “uncertainty”. The one hour observations were intentionally kept open, to prevent prejudice when the researchers studied the spontaneous behaviour of the participants in their natural classroom setting (Celestin-Westreich & Celestin, 2012).

The analysis of the classroom observations was done with a coding scheme. In this scheme, the two categories “authoritative” and “authoritarian” have both been operationalised into five labels based on the literature study. Per label, a teacher could score either on authoritarian practices, or on authoritative practices. After the scoring, teachers have been awarded with an overall score on both authoritative and authoritarian, which allowed the researchers to weigh the extent to which a teacher practiced a more authoritarian or a more authoritative teaching style.

In addition, the category “constructivism” has been operationalised into five labels with constructivist practices based on literature (e.g., Johnson, 2000; Johnson & McClure, 2004). Each classroom was given a score if this part of constructivism was practiced during the course of the observation. If classrooms scored on three or more labels, this classroom environment was perceived as constructivist by the researchers.

Focus groups parents. In total, 13 parents participated in five focus groups at the school attended by their children (see Appendix C). Five parents from the disadvantaged community and eight parents from the advantaged community participated. The focus groups consisted of four statements about parenting style. These statements came from an existing validated questionnaire: the Parental Authority Questionnaire - Revised (PAQ-R) (Reitman, Rhode, Hupp, & Altobelle, 2002). These statements were deliberately chosen to contribute to triangulation and to get a deeper understanding of parenting style, the underlying values and the goals towards which the socialisation of their children was directed. The last questions asked were about the sense of community and the possible existence of a PCS.

For parents, the coding scheme was divided into two main categories. The first category entails “parenting style” which was determined by labelling comments as either *authoritarian* (low warmth and high control) or *authoritative* (high warmth and high control) (Baumrind, 1971). In total, each parent commented on four statements, so each parent was

awarded with a score on either authoritative or authoritarian four times. Afterwards, these scores were weighed, so the researchers could determine which parents were more authoritative or more authoritarian oriented. For example, the authoritarian style was coded when a parent commented that he or she punished children when they would disagree with them. Authoritative parenting was for example coded when parents reported that they were willing to negotiate when their children would disagree with them.

The second category was "sense of community", with two accompanying labels representing either a presence or a lack of the sense of community. For example, a presence of a sense of community was coded when a parent reported that the community plays a big role in socialising children. A lack of a sense of community was for example coded when a parent reported that they did not cooperate with their neighbours, but that they were in competition. The final step of the analysis was to quantify the labels and weigh these, to indicate whether or not there was a sense of community felt by the parents.

Students' drawings. To gain understanding of children's perspective of their classroom environment, the researchers requested students (n = 102) to depict their classroom. This technique was based on the methodology of the Griffith's study, executed in Mauritius in 1998. Griffith's used this age-appropriate research technique because she conceived drawing "not as a process of imitating or copying the physical world, but rather as a process of synthesizing life experience" (Griffith, 1998). Students drawing their classroom showed their interpretation of their classroom.

The researchers followed Griffith's methodology. Based on the drawings, Griffith could conclude if students perceived their classroom as either more authoritarian and teacher-centred, or as more authoritative and learner-centred (Griffith, 1998). For example, if there is a big space for the blackboard and the teacher, if the teacher is in front of the classroom and shows no interaction with the pupils, this would point to a more authoritarian classroom environment. When there is a relatively small space for the blackboard and the teacher has an equal size in comparison to the students, and there is interaction between pupils and their teacher, this would point to a more authoritative classroom environment. After each drawing was scored on five criteria, researchers classified each drawing as either authoritarian or authoritative. The final step in this analysis was to quantify these classifications, to conclude how students perceived their classroom. As in the Griffith's study, the drawings played an

illustrative and supportive role in this research.

Quantitative Methodology

The quantitative part of the research consisted of three questionnaires based on existing, validated surveys. The questionnaires were distributed by the headmasters to teachers, children and their parents. This was not done by the researchers themselves, because the conditions described in the permission letter of the MoES did not allow this. Therefore, the researchers had no clear view if participants filled in the questionnaires under similar conditions. The questionnaires were in English, but if necessary, they were made available in Creole, the mother tongue of most participants.

Advantaged or disadvantaged community. Every participant was awarded with a score that indicates if they were: 1 = part of Mauritius' more advantaged community (teachers n = 50, parents n = 140, children n = 79) or 2 = part of Mauritius' more disadvantaged community (teachers n = 38, parents n = 128, children n = 76). This score was the independent variable in the analysis. The division in this dichotomous variable was based on information from the MoES about the schools and was confirmed by the headmasters of the participating schools.

Measures questionnaire teaching.

Teaching style. The STSQ with 24 items was used to define two categories of teaching style (Kuntsche et al., 2006) (see Appendix D). This validated questionnaire measures if teaching styles are more authoritarian or authoritative oriented by asking questions about warmth, support, rules and control. Sample items for authoritarian teaching are "A class must be obedient" and "I demand good results from my students". Sample items for authoritative teaching are "I show the pupils that I care about them, not only when it comes to academic work" and "I value a pupil's opinion, even if it differs from mine". Answers were given on a five-point Likert scale with response categories ranged from 1 (s*trongly disagree*) to 5 (*strongly agree*).

To determine the underlying structure of the questionnaire, *principal axis factoring*[4] was performed. If the factors correlate less than 10%, *varimax rotation*[5] was chosen. If the factors correlate more than 10%, *oblimin rotation* was used. Based on the outcome of the

[4] Principal axis factoring is a method for data reduction. It seeks underlying, latent variables in the items in the questionnaire.
[5] Rotating factors makes it easier to interpret the factors extracted with principal axis factoring.

scree-plot, *eigenvalues*, the *amount of variance* explained by the factors and content-related arguments, factors were chosen.

After the factor analysis, the *cronbach's alpha*[6] was determined for the factors. An examination of the questionnaire item-total statistics could indicate that items had to be removed, if this resulted in an increased cronbach's alpha. Afterwards, independent samples *t* tests were performed on the factor scores to test if teaching style varies in the advantaged and disadvantaged community. Finally, a new variable was computed to make a calculation of the percentage of teachers that have either an authoritarian or authoritative teaching style.

***Constructivism*.** The CLES with 20 items was used to assess the presence of constructivist practices in the classroom (Johnson & McClure, 2004) (see Appendix D). In this validated questionnaire, constructivism was operationalised into five different categories: "personal relevance", "critical voice", "shared control", "student negotiation" and "uncertainty", which were each covered by four items. Sample items for each category respectively were "In this class new learning relates to experiences or questions about the world inside and outside of school", "In this class students learn that science cannot always provide answers to problems", "In this class it is acceptable for students to express concern about anything that gets in the way of their learning", "In this class students help me decide which activities work best for them" and "In this class students talk to other students about how to solve problems". Answers were given on a five-point Likert scale with response categories ranged from 1 (*almost never*) to 5 (*almost always*).

A new variable was created from the 20 items to average participants' responses. The positive and relatively high Pearson correlations between items allowed the researchers to compose all items into one new variable "constructivism". The higher the score on the scale of one to five, the more constructivism teachers claim to practice in their classroom. Finally, following the same procedure, five new variables were created to average participants' responses on the five categories. The higher the score on one of these variables, the more teachers claim to practice this specific category of constructivism in their classroom.

Measures questionnaire parenting.

Parenting style. The PAQ-R based on Baumrind's conceptualisation of parenting style, with 20 items, was used to define two categories of parenting style (Reitman et al.,

[6] Cronbach's alpha is a measure for internal consistency and scale reliability. The higher the score, the closer the items in one factor are related.

2002) (see Appendix E). This validated questionnaire measures if parenting styles were more authoritarian or authoritative oriented by asking questions about warmth, support, rules and control. Also, this questionnaire gives insight in parenting practices used to achieve implicit socialisation goals (Darling & Steinberg, 1993).

Sample items for authoritarian parenting were "When I ask my children to do something, I expect it to be done immediately without questions" and "Smart parents should teach their children early exactly who is the boss in the family". Sample items for authoritative parenting were "I always encourage discussion when my children feel family rules and restrictions are unfair" and "My children know what I expect from them, but feel free to talk to me if they feel my expectations are unfair". Answers were given on a five-point Likert scale with response categories ranged from 1 (s*trongly disagree*) to 5 (*strongly agree*).

To determine the underlying structure of the questionnaire, principal axis factoring was performed following the same procedure as for teaching style. Reliability analysis using cronbach's alpha was performed, also following the same procedure as for teaching style. Afterwards, independent samples *t* tests were performed on the factor scores to test if parenting style varied in the advantaged and disadvantaged community. Finally, a new variable was computed, which was used to calculate a percentage of parents with specific parenting styles.

Measures questionnaire children.

Perceived parenting style. The Parent Perception Inventory (PPI) (Hazzard, Christensen, & Margolin, 1982) with eight items was used to define two categories of children's perception of parenting style (see Appendix F). This validated questionnaire measures if parenting styles are perceived as more authoritarian or authoritative by asking questions about positive reinforcement, involvement in decision making, punishment and allowing independence. A sample item for perceived authoritarian parenting was "My parents tell me that I'm no good when I did something wrong". A sample item for perceived authoritative parenting was "My parents let me help decide what we do at home". Answers were given on a five-point Likert scale with response categories ranged from 1 (*never*) to 5 (*a lot*).

To determine the underlying structure of the questionnaire, principal axis factoring was performed following the same procedure as for teaching and parenting style. Reliability analysis using cronbach's alpha was performed, also following the same procedure as for

teaching and parenting style. Finally, independent samples *t* tests were performed on the factor scores and new variables were created to weigh perceived parenting style. Afterwards, independent samples *t* tests were performed on the factor scores to test if the perceived parenting style differed between the advantaged and disadvantaged community. Finally, a new variable was computed, which was used to calculate a percentage of parents with specific parenting styles.

Constructivism. The validated Constructivist Learning Environment Survey - Comparative Student (CLES-CS) with 10 items was used to assess the presence of constructivist practices in the classroom according to students (Nix et al., 2005) (see Appendix F). Constructivism was also operationalised into five different categories mentioned above. Each category was only covered by two items, because the amount of time and effort invested by Standard V students had to be short and age-appropriate. Sample items were "In this class I talk with other students about how to solve problems" and "If I have a question, the teacher helps me to find the answer myself". Answers were given on a five-point Likert scale with response categories ranging from 1 (*almost never*) to 5 (*almost always*).

A new variable was created from the 10 items to average participants' responses. The positive and relatively high Pearson correlations between items allowed the researchers to compose all items into one new variable "constructivism". The higher the score on the scale of one to five, the more constructivism students claim to experience in their classroom. Finally, following the same procedure, five new variables were created to average participants' responses on the five categories. The higher the score on one of these variables, the more students experience this specific category of constructivism in their classroom.

Reliability and Validity

At the end of each survey, two evaluation questions were asked to enable the researchers to indicate the intelligibility of the questionnaire. These questions were about the entire survey and not about the individual items in the questionnaire. The categories to answer ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

The teachers reported the questions were easy to understand ($M = 4.15$, $SD = 0.58$) and that they were not hard to answer ($M = 1.97$, $SD = 0.71$). Parents also reported the questions were easy to understand ($M = 3.96$, $SD = 0.64$). Parents found it harder to answer the questions then teachers, although they still disagreed with the statement that it was hard to

answer the questions (M = 2.33, SD = 0.95). Finally, students reported the questions about both their classrooms (M = 3.93, SD = 0.97) and their parents (M = 4.07, SD = 1.16) were easy to answer. When interpreting these high means, the participants stated that the questionnaires were intelligible. Intelligibility enlarged the reliability of the questionnaires, because it increased the likelihood that the questionnaires consistently measured the targeted concepts.

Next to the evaluation questions to indicate reliability of the questionnaires, the statements in the interviews and focus groups were based on statements derived from these questionnaires, to increase validity of the qualitative part of the research. Furthermore, academics working at the MoES approved the data-collection techniques after peer-reviewing both the qualitative and quantitative methodology. This external control increased reliability as well. Finally, with the use of mixed methods, different techniques and different perspectives in order to find the answer to the same questions, the researchers tried to achieve triangulation. The use of multiple methods, data sources and researchers in order to collect as many affirmative evidence as possible, enhanced the validity of the research findings (Mathison, 1988; Thurmond, 2001).

Results

Constructivism

To answer the questions “To which extent are classroom environments in Standard V classrooms in Mauritian government schools constructivist?” and “Is there a difference in classroom environment between primary schools in advantaged and disadvantaged communities?”, the researchers used interviews with teachers, classroom observations and questionnaires for teachers and students.

Interviews with teachers. In general, the answers of all teachers to statements about constructivism revealed a positive attitude towards constructivist classroom environments in both the advantaged and disadvantaged community. All teachers agreed upon the importance of using personal relevance in their lessons. They stated that it is very important to relate learning to the perspective of their students:

> When we start something, we want it to match the perspective of the child. So everything we learn should tackle what the children already know about. Knowledge

> must be built upon what is already known. … It becomes more meaningful this way, because we can't teach pupils something that is abstract, we won't gain their attention.

All teachers also indicated the importance of their students' rights to form and express their own opinion, even if it differs from the teacher's opinion: "A child may say what he or she thinks, and I should not impose my opinion". By agreeing that it is important for children to be enabled to express their opinion, they indicated critical voice is a part of their classroom environment. Teachers stated that they respect the children's right to voice their opinion:

> Sometimes the children do view something in a different way. We have to respect that. Respect goes both ways. You have to show them we respect their opinion. We cannot just say that our answer is correct, and theirs is not. In what ways can we both come to a consensus?

When a statement about uncertainty was presented, all teachers indicated it is very important for children to learn about culture, especially because Mauritius is a multicultural society: "Mauritius is multicultural. They have to learn about culture. Not only about their own culture, but also about the culture of others". The aim of learning about culture is to learn people can act and think differently when they come from different backgrounds, and that it is important to respect these differences.

Not all teachers gave similar answers when a statement about student negotiation was presented to them. Three of the seven teachers indicated they do not want students to cooperate in problem-solving in their classroom, because they want to have control over what students learn. If students learn in cooperation, these teachers feel they do not have this control: "I think it is better if they ask me initially, so I know they get the concept correct". The other four teachers stated that student negotiation was an important aspect in their classroom. However, the reasons why differed for teachers. Two teachers used peer-learning as a means to decrease their workload: "This makes it easier for us. It is impossible to give every pupil attention, so it is a must." The other two teachers stated that they used peer-learning because it enhances motivation and performance, and "when they learn from their peers, they are also more relaxed than when they learn from the teacher".

Six of the seven teachers indicated shared control was not a part of their classroom

environment. A reason for this was that they feel they have limited freedom to incorporate this domain into their classrooms, because of test-related pressure: “Pedagogues decide what they are going to learn through the syllabus, so there is limited freedom to let them help decide what they are going to learn”. Another reason for a lack of shared control given by four teachers was that they did not know how to incorporate constructivism and cooperative learning into their classrooms.

Classroom observations. A contradiction was found between the values of teachers about practicing constructivism and the actual practices in the classroom. The classroom observations did not confirm that constructivism was a part of every classroom environment. Only two out of nine classes were classified as constructivist based on the observations (see Appendix G). One of these classrooms was in the advantaged community, and the other was in the disadvantaged community. In the constructivist classrooms, the topics were made relevant to the students and students were active participants. They took ownership over their own learning activities, and for the learning activities of their peers. Peer interaction was the main means for problem-solving. Teachers and peers reciprocally stimulated creativity and innovative thinking. In one class, but not in the other, students were enabled to think critically and express their opinion.

In the seven classes that were not classified as constructivist, there was no or very little content-related peer interaction for problem-solving. Pupils were not enabled to think critically and express an opinion, instead they were expected to be obedient and were passively receiving knowledge. Knowledge was provided plenary by the teacher, and the students were repeating knowledge all together at the same time.

Questionnaires for teachers. To obtain additional information about constructivist practices in Mauritian classrooms, teachers filled in a questionnaire based on the CLES (Johnson & McClure, 2004). Using items from the CLES, a new variable “constructivism” was constructed. Scores on this new variable, ranging from one to five, indicated that on average teachers stated that they often practiced constructivism in their classroom ($M = 3.67$, $SD = 0.56$). No significant difference in the practice of constructivism was found between teachers in the advantaged community ($M = 3.61$, $SD = 0.56$) and in the disadvantaged community ($M = 3.74$, $SD = 0.55$) with an independent samples t test, $t(84) = -0.09$, $p = .28$, two-tailed, $d = 0.23$, 95% CI [-0.37,0.11].

Five more variables were constructed, representing the operationalisation of

constructivism. The mean scores varied from sometimes to almost always. Teachers gave the highest score to critical voice (M = 4.22, SD = 0.62). There was no significant difference between the advantaged (M = 4.15, SD = 0.70) and disadvantaged (M = 4.32, SD = 0.51) community on the mean scores, $t(85) = -1.30$, $p = .20$, two-tailed, $d = 0.28$, 95% CI [-0.42,0.09]. The second highest score was on personal relevance (M = 4.01, SD = 0.59), with no significant difference between the advantaged (M = 3.98, SD = 0.61) and disadvantaged (M = 4.04, SD = 0.57) community, $t(84) = -0.47$, $p = .64$, two-tailed, $d = 0.10$, 95% CI [-0.32,0.19]. Student negotiation has the third highest mean (M = 3.49, SD = 0.83). There was no significant difference between the advantaged (M = 3.48, SD = 0.71) and disadvantaged (M = 3.50, SD = 0.96) community, $t(66) = -0.11$, $p = .92$, two-tailed, $d = 0.02$, 95% CI [-0.39,0.35]. Teachers gave the second lowest score to shared control (M = 3.46, SD = 0.76). There was no significant difference between the advantaged (M = 3.34, SD = 0.89) and disadvantaged (M = 3.62, SD = 0.66) community, $t(85) = -1.76$, $p = .08$, two-tailed, d =0 .36, 95% CI [-0.61,0.04]. The least practiced form of constructivism was uncertainty of science (M = 3.17, SD = 0.81). There was no significant difference between the advantaged (M = 3.12, SD = 0.83) and disadvantaged (M = 3.24, SD = 0.80) community, $t(84) = -0.66$, $p = .51$, two-tailed, $d = 0.15$, 95% CI [-0.47,0.24].

Questionnaires for students. Not only teachers, but also students filled in a questionnaire. Using items from the CLES-CS, a new variable "constructivism" was constructed (Nix et al., 2005). Scores on this new variable, ranging from one to five, indicated that students on average stated that they often use constructivism in their classroom (M = 3.60, SD = 0.51). A significant difference in the practice of constructivism was found between students in the advantaged community (M = 3.48, SD = 0.49) and in the disadvantaged community (M = 3.74, SD = 0.51) with an independent samples t test, $t(152) = -3.27$, p = < .01, two-tailed, $d = 0.52$, 95% CI [-0.42,-10]. This indicated classrooms in disadvantaged communities practiced more constructivist learning than classrooms in the advantaged community.

Five more variables were constructed, representing the operationalisation of constructivism. The mean scores varied from sometimes to almost always. Students gave the highest score to personal relevance (M = 4.62, SD = 0.58). There was no significant difference between the advantaged (M = 4.60, SD = 0.47) and disadvantaged (M = 4.64, SD = 0.68) community on the mean scores, $t(153) = -0.47$, $p = .64$, two-tailed, $d = 0.07$, 95% CI

[-0.23,0.14]. The second highest score was on uncertainty (M = 4.13, SD = 0.77), with no significant difference between the advantaged (M = 4.20, SD = 0.71) and disadvantaged (M = 4.05, SD = 0.83) community, $t(153) = 1.21$, $p = .23$, two-tailed, $d = 0.19$, 95% CI [-0.09,0.39]. Student Negotiation has the third highest mean (M = 3.37, SD = 0.94). There was no significant difference between the advantaged (M = 3.28, SD = 0.99) and disadvantaged (M = 3.47, SD = 0.88) community, $t(153) = -1.21$, $p = .23$, two-tailed, $d = 0.20$, 95% CI [-0.48,0.11]. Students gave the second lowest score to critical voice (M = 3.03, SD = 1.02). There was no significant difference between the advantaged (M = 2.94, SD = 1.11) and disadvantaged (M = 3.11, SD = 0.91) community, $t(1495) = -1.04$, $p = .30$, two-tailed, d = 0.17, 95% CI [-0.49,0.15]. The least practiced form of constructivism was shared control (M = 2.85, SD = 1.14). However, there was a significant difference. Students reported that more shared control was practiced in classrooms in the disadvantaged communities (M = 3.38, SD = 1.00) than in the advantaged communities (M = 2.35, SD = 1.04), $t(153) = -6.27$, $p = < .01$, two-tailed, $d = 1.01$, 95% CI [-1.35,-0.70].

Authoritarian and Authoritative Teaching Styles

To answer the questions “Is the teaching style in Standard V classrooms more authoritarian or more authoritative oriented?” and “Is there a difference in teaching style between primary schools in advantaged and disadvantaged communities?”, the researchers used interviews with teachers, classroom observations, students’ drawings and questionnaires for teachers.

Interviews with teachers. Seven interviews with teachers were held. Four of the seven interviewed teachers gave answers with predominant authoritative underlying values. In these answers, the importance of structure and rules was emphasised, in combination with an emphasis on a warm, personal bond between teacher and students. For example, when the statement “I set down clearly defined rules which my pupils must obey” was presented, the following answer was clearly authoritative: “We make rules with the class. It is important that the kids understand the rules. If they do not obey, I can remind them of the rules we set together”. Another example, when asked “When I ask my students to do something, I expect it to be done immediately without questions”, an answer classified as authoritative was: “I don’t think that is a good idea. Explaining is better, it is better for them to ask questions if they don’t understand something”. Another authoritative answer was as follows:

> Since we are like a family in this classroom, I do not want any child to feel they are lacking behind. There is no uniformity amongst my children, so I adjust to them. But still, when I ask them to do something, I expect the results to be there in the end.

Two of the seven teachers expressed both authoritative and authoritarian values, but were predominantly authoritative. These two teachers, as did the other five teachers, stated that when they were young, their classrooms used to be very authoritarian and teacher-centred. They noticed, however, that society is changing: “Children nowadays are more aware of their rights. They are able to voice their opinion better than we did when we were young”. They stated that they see value in this change, but they expressed difficulties with adapting their teaching style to this change: “We did not have a role model".

One of the seven teachers gave answers with predominant authoritarian underlying values. In these answers, emphasis was placed on obeying, rules and authority. Not one time a personal bond with pupils was mentioned in the answers of this teacher. For example, answers were “Yes, a class must always, at all times, be kept under control. Definitely” and “I expect the work to be done. The work must be done! This is discipline”.

On the contrary, in interviews with three teachers from disadvantaged communities, a strong emphasis was placed on personal involvement in the lives of their students: “In a sense, we teachers are like parents. We need to guide them similar to parental care”. They also expressed concern about this involvement “I have to be careful not to become over caring or too friendly. I need to search for a balance”. One teacher expressed the reason for the commitment and the extensive amount of care they give to the children:

> My family and friends ask me why I get so involved. But these kids have no one at home, so I have to take care of them, not only when it comes to academic work. I cook something extra every night and I bring the food to school. I share with my students if they did not get any food to bring to school from their parents.

Classroom observations. In addition to interviews, classroom observations were held (see Appendix G). The classroom observation showed six out of the nine teachers scored more than three times on the authoritarian labels and were classified as more authoritarian. On

the contrary, three out of the nine teachers scored more than three times on the authoritative labels and were classified as more authoritative.

A division can be made between four observations in the advantaged communities and five observations in the disadvantaged communities. When viewing from this perspective, the results show teachers in the advantaged communities were classified as authoritarian twice, and also twice as authoritative. In the disadvantaged community, two teachers were classified as authoritative, and three teachers were classified as authoritarian.

The classroom observations confirmed that the teacher that expressed only authoritarian values in the interview also practiced an authoritarian teaching style; the teacher scored on all five authoritarian labels. On the contrary, two teachers scored on all five authoritative labels. However, for the other observations the results were more ambiguous. All other teachers showed a mix of both authoritative and authoritarian practices. It should be noted that every teacher, except for the one completely authoritarian teacher, scored on the label *warmth*, which indicated these teachers practiced a friendly and kind approach towards students.

Students' drawings. To illustrate students' perspective on their classroom environment, students were requested to depict their classroom (see Appendix H). 102 students submitted a drawing, and in in 22 of the drawings (21.57%), children depicted interaction between them and their teacher or their peers, in 80 drawings (78.43%) there was no interaction. In the majority of the drawings, namely in 83, the children drew themselves sitting in rows (81.37%), and in 92 drawings (90.20%) the teacher was in front of the classroom teaching the class. The blackboard consumed a relatively big space in 73 drawings (71.57%), as did the teacher in 35 drawings (34.31%). Overall, 82 drawings (80.4%) were classified as authoritarian, and 20 drawings (19.6%) were classified as authoritative.

Questionnaires for teachers. Additional information about teaching styles was obtained using the STSQ (Kuntsche et al., 2006). A factor analysis with oblimin rotation was performed. As expected, based on the literature study and the use of a validated questionnaire that measures authoritarian and authoritative teaching, two underlying factors, Authoritative and Authoritarian, were found (see Table 1).

Solutions for three or four factors were examined using oblimin rotations of the factor loading matrix. The two-factor solution, which explained a total of 47.37% of variance, was preferred because of: a) its theoretical support, b) the scree-plot which clearly showed two

factors with relatively high eigenvalues above the point where decrease of eigenvalues starts to abruptly level off, and c) the amount of total variance explained by two factors, which closely approaches 50%. The first factor Authoritarian explained 36.75% of variance, the second factor Authoritative explained 10.62% of variance.

Internal consistency of the eight-item factor Authoritarian teaching was high with a cronbach's alpha of .83 after deleting four items. Cronbach's alpha for the 10-item factor Authoritative teaching was also high ($\alpha = .84$). The deleted items did not contribute to a simple, clear factor structure. There was no substantial increase in cronbach's alpha if more items had been eliminated.

Table 1

Factor Loadings for Principal Axis Factoring With Oblimin Rotation of Teaching Styles

	Loadings	
Items	Authoritarian	Authoritative
I have established routines / rules for how the pupils are supposed to act in plenary teaching sessions	**.73**	
I set down clearly defined rules which my pupils must obey	**.78**	
I am closely monitoring the pupils behaviour in class	**.63**	
I have established routines / rules for how the pupils are supposed to act when they change activity / workplace etc.	**.78**	
I have established routines / rules for individual work	**.78**	
A class must be obedient	**.46**	
I am disappointed and angry when they behave badly	**.41**	
I demand good results from my students	**.56**	
I have a good relationship with my pupils		**.50**
I congratulate them when they have done something well		**.49**
I encourage them when they score badly		**.43**
I am there for my pupils if they need help		**.79**
I show interest in each pupil		**.75**
I work actively to create good relationships with my pupils		**.64**
I show the pupils that I care about them, not only when it comes to academic work		**.72**
I value my pupils opinion even if it differs from mine		**.69**
A class must be kept under control		**.48**
I comfort my pupils when they are having difficulties		**.50**
Percentage of Variance:	36.75%	10.62%

Note. Factor loadings > .40 are in boldface.

The independent samples *t* test with independent variable "disadvantaged or advantaged community" on the relatively normally distributed factor scores of Authoritarian teaching, was non-significant, $t(80) = 0.96$, $p = .34$, two-tailed, $d = 0.21$, 95% CI [-0.22,0.62].

Nevertheless, the means on the factor scores were different for advantaged (M = 0.09, SD = 0.90) and disadvantaged communities (M = -0.11, SD = 0.99). These results indicate that teachers in advantaged communities practice a more authoritarian teaching style than teachers in disadvantaged communities, although this difference is not significant.

The independent samples t test with independent variable "disadvantaged or advantaged community" on the relatively normally distributed factor scores of Authoritative teaching, was non-significant, $t(80) = -0.43$, $p = .67$, two-tailed, $d = 0.09$, 95% CI [-0.51,0.33]. Nevertheless, the means on the factor scores were different for advantaged communities (M = -0.04, SD = 0.93) and disadvantaged communities (M = 0.05, SD = 0.97). These results indicate that teachers in advantaged communities practice a less authoritative teaching style than teachers in disadvantaged communities, although this difference is not significant.

Finally, to get an overall picture of teaching styles practiced in Mauritius, a new variable was computed based on the equation FAC1_Authoritarian> FAC2_Authoritative. The sum was used to calculate the percentage of teachers that are either more authoritarian or more authoritative. In total, 53.7% of teachers had a more authoritarian teaching style, and 46.3% of teachers had a more authoritative teaching style.

Authoritarian and Authoritative Parenting Styles

To answer the questions "Is the parenting style of Mauritian parents of primary school-aged children more authoritarian or more authoritative oriented?" and "Is there a difference in parenting style between advantaged and disadvantaged communities?", the researchers used focus groups with parents and questionnaires for parents and children.

Focus groups with parents. Two of the 13 parents that participated in the focus groups gave as much authoritative as authoritarian responses to the statements. One parent had authoritarian values such as obedience, but this parent did support the autonomy of the child by encouraging activities that the children enjoy, even if this parent disagrees: "My daughter likes to do classical dance, my son likes to draw and paint, although I do not quite agree with it, I encourage them because they like it ". The other parent emphasised the importance of a warm bond between parents and children, but does use authoritarian harsh control when the children disobey: "Children rebel. Then I shout and use force".

Six of the 13 parents gave answers with predominant authoritarian underlying values.

Three of these parents lived in the disadvantaged community, and three parents lived in the advantaged community. These parents emphasised obedience, making rules without discussing these and having clear expectations of their children's behaviour. For example, when the statement "Other parents should use more force to get their children to behave" was presented, the following answers were clearly authoritarian: "If children misbehave, they want to do it again if their parents do not use force" and "They do disagree with me. Then I punish them, because they have to do it". These parents stated that they decide what is best for their children, without negotiating with them: "I am the boss and I decide what happens". When their children disobey, they punish them without explaining why they punish them. Furthermore, they use force because they believe this will eventually contribute to their development:

> I believe that he is a boy. He will become a man in society. He has to be able to face any sort of behaviour, whether it is force, whether I slap him. .... He has to face this, because he has to learn to face the world. He has to be strong.

> In Standard V they change, they are building their character, they react really quickly to things: "Why, why?" Then we must use force. … When we do this, we are not happy, but we have to do it to make them become good human beings in the future. They have to learn discipline and respect.

Five of the 13 parents gave answers with predominant authoritative underlying values. Only one of these five parents was part of the disadvantaged community. In these answers, parents emphasised the importance of talking to their children, and the warm and affectionate bond between parent and child. For example, when the statement "When I ask my children to do something, I expect it to be done immediately and without questions" was presented, the following answer was clearly authoritative:

> If you try to do things with harshness, he will not do it. The way I do it, is always listen, very softly. I get him to do things by talking with him. Then he will obey: "What do you think superman will do at that moment?"

The authoritative parents emphasised the importance of the development of the unique character of their child. They support this process by allowing age-appropriate freedom. Nevertheless, control and discipline are important to these parents: “We give him limits, but within this he has some freedom”. The difference with the authoritarian parents was that all the authoritative parents stated that they talk to their children about decisions and explain the reasons why they make decisions. For example, when the statement “My children are free to make their own decisions, even if I disagree” was presented, the following answer was clearly authoritative and representative for the answers of the other authoritative parents:

> For their own development, they need to have a say in a lot of things. They need to develop their own character, one day they will be better than us. They should not become like us, I let them develop by themselves also.

All authoritative parents stated that they do not use force to get their children to behave. They think this will damage the equality within the relationship with their children. They prefer to communicate and provide their children with warmth and care: “I do not believe in being harsh to children, because they are young and looking for understanding and for love. Force does not help.” Another authoritative parent responded to this statement as follows:

> You have to allow them some freedom. This will help them learn how to manage their own life. Using force will make children a, what is the word, a robot, they will not develop their inner potential, that has to be discovered by themselves.

In two focus groups, six parents found agreement in concluding that they imitate their own parents. However, they note that the Mauritian society is changing. They do not want to be authoritarian like their own parents, but they struggle to find novel ways to get their children to behave. One authoritative parent gave an example of how parenting style has changed over the years. This parent used to be more authoritarian, using force to get the child to behave, but discovered this did not work:

> Sometimes I used to give my son a little correction, a little slap, but the force did not

> work. Now, if I take my time and talk to him, or spoil him a little sometimes, at those times he obeys. When I ask him politely or when I explain why I want him to do this, he obeys. I feel better when I do it in this way than when I am using force.

When parents were asked about the goals towards which they direct the socialisation of their children, two main categories can be distinguished. Unanimously, all parents want to teach their children to become good citizens. When asked what were characteristics of a good citizen, they all stated that they want their children to have good manners and values such as respect for others and elders. Ten of the 13 parents pointed out another goal towards which they direct socialisation of their children; becoming successful in their education and their future work:

> They become successful, responsible citizens. When I am talking about successful I am talking about successful in their personal life and in their work, and a responsible citizen that has respect for others and values.

Questionnaires for parents. For the quantitative analysis on parenting, The PAQ-R was used to measure if parenting styles were more authoritarian or authoritative (Reitman et al., 2002). A factor analysis with varimax rotation was performed. As expected, based on the literature study and the use of the validated questionnaire, two underlying factors, Authoritative and Authoritarian, were found (see Table 2).

This two-factor model was preferred after examining solutions with three or four factors. Although the total variance explained in a two-factor solution is 33.99%, which is relatively moderate, these two arguments were the reason for the preference of the two-factor model: a) its theoretical support, and b) the scree-plot which clearly showed two factors with relatively high eigenvalues above the point where decrease of eigenvalues starts to abruptly level off. The first factor Authoritarian explained 19.40% of variance, the second factor Authoritative explained 14.59% of variance.

After deleting five items that did not contribute to a simple, clear factor structure, internal consistency on both scales was moderate. Cronbach's alpha for the seven-item factor Authoritarian parenting was .69 after deleting three items. Cronbach's alpha for the eight-item factor Authoritative parenting was .63 after deleting two items. If more items were deleted,

this would not lead to a substantial increase in alpha's.

Both factors were equally distributed. An independent samples *t* test with independent variable "disadvantaged or advantaged community" on the factor scores of Authoritarian parenting was significant, $t(248) = -2.46$, $p = .02$, two-tailed, $d = 0.28$, 95% CI [-0.56,-0.06]. This significant difference indicated that parents from a disadvantaged community practice more authoritarian parenting ($M = 0.16$, $SD = 0.95$) than parents in the advantaged communities ($M = -0.14$, $SD = 1.02$).

Table 2

Factor Loadings for Principal Axis Factoring With Varimax Rotation of Parenting Styles

Items	Loadings	
	Authoritarian	Authoritative
It is for my children's own good to require them to do what I think is right, even if they don't agree	**.40**	
When I ask my children to do something, I expect it to be done immediately without questions	**.52**	
Other parents should use more force to get their children to behave	.39	
Smart parents should teach their children early exactly who is the boss in the family	**.57**	
Most problems in society could be solved if parents were stricter when their children disobey	**.50**	
I let my children know what behaviour is expected and if they don't follow the rules they get punished	**.56**	
I often tell my children exactly what I want them to do and how I expect them to do it	**.53**	
Once family rules have been made, I discuss the reasons for these rules with my children		.32
I always encourage discussion when my children feel family rules and restrictions are unfair		**.55**
I direct the activities and decisions of my children by talking with them and using rewards and punishments		.38
My children know what I expect from them, but feel free to talk to me if they feel my expectations are unfair		**.56**
I tell my children what they should do, but I explain why I want them to do it		**.53**
I have clear standards of behaviour for my children, but I am willing to listen to their concerns and discuss the rules with them		.37
I set firm guidelines for my children but am understanding when they disagree with me		**.44**
I listen to my children when making decisions, but I do not decide something simply because my children want it		.33
Percentage of Variance:	19.40%	14.59%

Note. Factor loadings > .40 are in boldface.

An independent samples *t* test with independent variable "disadvantaged or advantaged community" on the factor scores of Authoritative parenting was non-significant, $t(248) = 1.00$, $p = .32$, two-tailed, $d = 0.13$, 95% CI [-0.13,0.38]. Nevertheless, the means on the factor scores were different for advantaged communities ($M = 0.06$, $SD = 0.84$) and disadvantaged communities ($M = -0.07$, $SD = 1.16$). These results indicated that parents in advantaged communities practice more authoritative parenting styles than the parents in disadvantaged communities, although this difference is not significant.

Finally, to get an overall picture of parenting styles practiced in Mauritius, a new variable was computed based on the equation FAC1_Authoritarian> FAC2_Authoritative. The sum was used to make a calculation of the percentage of parents that are either more authoritarian or more authoritative. In total, 46.0% of parents indicated to have a more authoritarian parenting style, and 54.0% of parents indicated to have a more authoritative parenting style.

Questionnaires for children. Like the quantitative analyses on teaching and parenting, a factor analysis was performed on the parenting style perceived by children using items from The PPI (Hazzard et al., 1982). In contrast to what was expected, no meaningful underlying factors could be determined. In order to get an indication of the perceived parenting styles, instead of performing a factor analysis, two new variables were computed based on the means of two items that measure authoritarian and two items that measure authoritative. Based on this, children perceived their parents in general as more authoritative ($M = 4.18$, $SD = 0.84$) than authoritarian ($M = 3.12$, $SD = 1.06$).

To get insight in possible differences between communities, independent samples *t* tests between the independent variable "disadvantaged or advantaged community" and the items from the questionnaire were performed. These showed three significant differences between groups. First, there was a significant difference between children from different communities on the item "My parents tell me I'm no good when I did something wrong", $t(146) = 2.03$, $p = .04$, two-tailed, $d = 0.33$, 95% CI [0.01,0.86]. This test showed that children from advantaged communities ($M = 3.46$, $SD = 1.44$) perceive their parents tell them they are no good more often than children from disadvantaged communities ($M = 3.03$, $SD = 1.18$).

Second, there was a significant difference between children from different communities on the item "My parents let me help decide what we do at home", $t(141) = -3.44$, $p = < .01$, two-tailed, $d = 0.56$, 95% CI [-1.19,-0.32]. This test showed that children

from disadvantaged communities (M = 3.17, SD = 1.14) perceive their parents let them help decide what they do at home more often than children from advantaged communities (M = 2.41, SD = 1.54).

Finally, there was a significant difference between children from different communities on the item "Sometimes my parents ignore me when they think I behaved bad", $t(142) = 2.97$, $p = < .01$, two-tailed, $d = 0.48$, 95% CI [0.19,0.95]. This test showed that children from advantaged communities (M = 2.28, SD = 1.34) feel they are ignored when their parents think they behaved badly more often than children from disadvantaged communities (M = 1.71, SD = 1.01).

Civil Society

To answer the question "Do parents, teachers and headmasters feel there is a PCS in their community?", the researchers used interviews with headmasters, interviews with teachers and focus groups with parents. Participants were asked about their sense of community; do they feel a shared responsibility in socialising and educating their children with the school, other parents and the community they live in? Overall, participants in disadvantaged communities felt less of a sense of community than participants from advantaged communities.

In two schools headmasters, teachers and parents agreed that they did not feel a sense of community, and that not all parents are involved in the education of their children: "Parents do not care for their children". In one school, the headmaster stated:

> It is a problem that not all parents value this. Many children come from broken homes, the area is deprived, so the environment is not good. Not all parents care. Some do, but others are taken up by work and themselves, their own lives. The support for the children is not as is should be. Most of the children are left to themselves. The parents model their own parents. They don't see the school as an opportunity to learn, because they themselves had bad experiences in school when they were young. This affects their children. … These kids need exposure to an environment that contributes to their learning. Parents … do not value education because they don't realise the impact and implications of education.

Parents with children in these schools, however, have a different perspective; they state that they do care about their children. Nevertheless, they stated that there is no sense of community. They do not know who to talk to if there is a problem, and they do not have frequent contact with the school or other members of the community: “There is no one in the community I would go to. If I have a problem, I try to solve it by myself. I do not go to other parents, I take my responsibility”.

In one school, headmasters, teachers as well as parents agreed there is a sense of community. When the headmaster and teachers were asked to describe this sense of community, they mentioned only formal meetings with the Parent-Teacher Association, but they did not mention any informal contact between the school, parents and the community. When the parents were asked to describe the sense of community, they stated that they cooperate with the teacher as one team: “The educators, parents and students are the three essential items in educating”.

In two other schools, there was no agreement between headmasters, parents and teachers. In these schools, both headmasters stated that there is a strong sense of community. They stated that when a problem arises, parents come to school and discuss this with the teacher and if necessary with the headmaster: “The door of the school is always open for parents”. One headmaster had a personal explanation for his perception of the sense of community:

> I lived in this village all my life. I am acquainted with this school, with the community, with the parents of the kids. These people know me, they know my personality. This makes it easy for the community to get in touch with me.

Contradictory, both parents and teachers in these schools stated that they did not feel a sense of community or a shared responsibility in educating their children. Teachers felt parents leave too much responsibility to the teacher, and that parents do not take enough responsibility themselves:

> Some pupils just go home to eat, do their homework, sleep, no time for play, for exercise at home. They are confined within the house. They do not get enough attention from parents. As primary school teachers, we have a responsibility, we carry

out the responsibility, but we cannot take all the tasks from parents.

The teachers in both of these schools stated that they actually do try to involve parents to create a sense of community: “I encourage parents to come to me when they have a problem”. Parents confirmed they find a sense of community important, but when they were asked to describe this sense of community, they did not mention the teacher or school as a part of the community.

Finally, though not systematically observed, a notable result was the language gap between the languages used at home and at school. At school, the official language is English; so all tests are in English. But during the observations, all lessons were given in French or Creole. This result was confirmed in the interviews with teachers. Teachers stated that the language gap is a problem that hinders academic achievement of pupils. This problem was especially emphasised in the disadvantaged community where it was used as an explanation for the relatively low CPE-pass rates of these schools.

Discussion

Because Mauritius wants to become a knowledge based economy, it is of great importance that all Mauritians are provided with quality education from primary school onwards. The scope of this explorative baseline research is to provide the MoES with descriptive information about the pedagogical climate in which primary school-aged children in Mauritius grow up. The main aim of the research is to evaluate whether or not the pedagogical climate contributes to academic achievement and the development of 21st century skills. A distinction is made between more advantaged and more disadvantaged communities in order to account for the differences in academic achievement between children from these groups. In the discussion section, answers to all sub questions are given before the answer to the main question can be formulated.

Constructivism

The hypothesis “both constructivist classroom environments and classrooms without constructivist practices will be found” was partially confirmed. Both students and teachers report constructivist practices are common in their daily life at school. However, a contradiction was found between these reports about practicing constructivism and the presence of actual cooperative learning in the classrooms. In most classes there was no

content-related peer interaction and students were passive recipients instead of active participants. Although Mauritian teachers in general reveal a positive attitude towards all aspects of constructivism, they struggle to incorporate all the aspects into their classroom.

Teachers struggle to make their students active participants in their learning process, because test-related pressure determines the way they have to construct their classroom environment. The educational policy with a focus on passing the CPE and resultant pressure on teachers to prepare their students for this test, confines them to focus on knowledge more than on skills and attitudes. Education just focussed on providing established knowledge, locks out the possibility of making a classroom constructivist (e.g., Johnson et al., 2000; Vygotsky, 1978). This undermines teacher's agency and limits teachers freedom to create a classroom setting where children are active participants and co-constructing knowledge through interaction (Pinquart, 2015).

Teaching Style

The hypothesis "there is a mixture between more authoritarian teachers and more authoritative teachers" was confirmed. However, teaching styles in Mauritian classrooms are predominantly authoritarian, even though the underlying values of teachers in general appeared to be more authoritative. This contrast in values and practices can be explained when viewed from the perspective of the changes Mauritian society is undergoing. With the transition in the economic system, the task of the teacher is also undergoing a transition (Voogt & Roblin, 2010).

Teachers nowadays have a different task than the teachers that educated them when they were young. If Mauritius is transforming into a knowledge based economy, children have to be prepared for a different labour market (Rotherham & Willingham, 2009). This requires teachers to enable students to develop novel attitudes and skills; instead of being docile, these children have to develop into critical, pro-active citizens.

This requires a change from authoritarian to authoritative teacher approaches (Ro'iste et al., 2012). The mix in authoritarian and authoritative values and practices, where values are predominantly authoritative and practices are predominantly authoritarian, might indicate this development in teacher approaches has set in. And it also might show that values change faster than practices; teachers are willing to adapt their teaching style to the changing society, but they have not yet fully grasped how to be innovative in their teaching practices.

Parenting Style

Both authoritarian and authoritative parenting styles are common and approximately equally divided amongst parents, which is in line with the hypothesis that "both authoritarian and authoritative parenting styles will exist in Mauritius". Despite the difference in parenting style, parents do have similar goals towards which they direct the socialisation of their children (Darling & Steinberg, 1993): becoming well-behaved citizens that are successful in their education and future career. However, the practices parents apply to help their children reach these goals differ per parenting style (Darling & Steinberg, 1993).

An explanation for the coexistence of two different parenting styles in Mauritius could be, like it is for teachers, the changing society in which Mauritians live. On the one hand, the existence of authoritarian parenting styles can be explained because when these parents grew up, they lived in authoritarian households. These parents imitate the example given to them (De Winter, 2012). On the other hand, the existence of authoritative parenting styles can be explained because some parents do not want to be as authoritarian as their own parents were. These parents are aware of the changing societal expectations towards their children, which might influence their role as a parent.

Differences Between Growing Up in the Advantaged and Disadvantaged Community

Even though children from disadvantaged communities perceive they share control over the activities in their classroom with their teachers and peers more than children from the advantaged community, the classroom environments regarding constructivism seem relatively similar in both communities. Nevertheless, teachers in disadvantaged communities practice a slightly different teaching style than teachers in the advantaged community; in the first they practice a teaching style that is a little more authoritative, and in the latter authoritarian teaching is more prominently present. This difference could be explained because teachers in disadvantaged communities feel extensive involvement in the lives of their students and are therefore more sensitive and responsive in the relationship with their pupils (Walker, 2008).

Although the difference in style is small for teachers, it does lead to a cultural discontinuity between school and home culture for children in the disadvantaged communities because, in line with the hypothesis, their parents are considerably more authoritarian than parents in the advantaged communities. Children in the disadvantaged communities might experience little correspondence between socialisation goals from their parents and their teachers (e.g., Darling & Steinberg, 1993; Laville, 2000; Owodally, 2014). Consequently, the

internal distress of these children increases, because they have to adapt to different norms and expectations when shifting between home and school (Aunola & Nurmi, 2004). This decreases the openness to socialisation and can become an obstacle in their learning process (Darling & Steinberg, 1993). The cultural discontinuity could be a possible explanation for the weaker performance in school by children in disadvantaged communities, relative to their peers that live in more advantaged communities and who are less exposed to a gap between home and school culture.

An Educative and Pedagogical Civil Society

A robust PCS can be a way to tackle the problem of a pedagogical mismatch between home and school culture (De Winter, 2012). The social support coming from a connected and committed community contributes to successful child development. This research confirms the hypothesis "there is a stronger sense of community and thus a stronger PCS in the advantaged areas, than in the disadvantaged areas". Specifically in the disadvantaged communities, where a strong sense of community would especially benefit child development and compensate cultural discontinuity (e.g., Laville, 2000; Owodally, 2014), a shared responsibility in child rearing is scarcely felt. A possible explanation could be that parents themselves have had bad experiences in education, and this results in a lack of parental involvement in the education of their children.

But also in the more advantaged areas, there is not always a robust PCS. A possible explanation of the lack of this PCS could be the co-existence of value orientations in Mauritius (Harwood, Schölmerich, & Schulze, 2000). Both headmasters and parents in most communities view the concept "community" in a rather individualistic manner. In socialising and educating children, social contact is more or less contractual, for example formed through the Parent-Teacher Association. On the contrary, teachers in general place socialisation and education in a more collectivistic perspective; child rearing naturally is a shared responsibility. Thus, Mauritians have different definitions for the same concept, which might not contribute to shared voluntary efforts in socialising children, because the goals towards which socialisation is directed differ for different socialising agents (Bronfenbrenner, 1979; Darling & Steinberg, 1993; De Winter, 2012). However, the fact that participants give different definitions forthcoming from different value orientations confirms the conclusion that Mauritius is a society in transition.

A Non-Coherent Pedagogical Climate

In both the advantaged and disadvantaged communities in Mauritius, children are exposed to a mixture of languages, interaction styles and practices in educators. The multilingualism poses an extra challenge to Mauritian children in primary schools, especially in the disadvantaged community. The fact that tests are in a language children in the disadvantaged community are not exposed to at home increases the likelihood of failure on these tests, because the children do not understand what is asked from them. Because this language gap is especially visible in the disadvantaged community, it could be an explanation for the relatively lower academic achievement of children in this community. However, this does not necessarily mean these children did not develop as well as their peers in the advantaged community. Instead it could indicate the way academic achievement is measured in Mauritius is not valid for children who do not speak English at home. The use of different languages at home and at school makes the pedagogical climate not completely coherent.

Not only the problem of multilingualism is more prominent in the disadvantaged community, the pedagogical mismatch in interaction style is also more prominent in these communities. Whereas teachers interact with children in the disadvantaged community in a more authoritative manner, parents approach these children in a more authoritarian way. This implies that in the disadvantaged community children experience different approaches when interacting with different socialising agents (Bronfenbrenner, 1979). These inconsistencies make the pedagogical climate in which they grow up not completely coherent.

The Pedagogical Climate: a Mismatch

Concluding, the pedagogical climate in which Mauritian children grow up does not fully contribute to optimal child development, especially amongst the disadvantaged communities. Children might experience a different approach from their parents than their teachers. This pedagogical mismatch between home and school culture does not contribute to children's development and openness to socialisation (Darling & Steinberg, 1993; Eisenhart, 2001). This could undermine their learning process because, when a gap between practices at home and at school exists, education could become irrelevant to the learner. Thus, this discontinuity does not contribute to academic achievement nor does it contribute to the development of the 21st century skills.

Additionally, although teachers in general have a positive attitude towards constructivist classroom environments, their classrooms are still mainly shaped as a three R-

type, exposing children to a traditional banking model of education (Freire, 1979; Griffith, 2000). And although teachers' values are predominantly authoritative, the actual teaching style is still more authoritarian. These two aspects make the Mauritian government primary school classrooms teacher-centred, most probably due to the test and exam procedures which do not cope with constructivist and authoritative approaches. This procedure also does not allow Mauritian classrooms to become learner-centred and it does not allow learners to take ownership over their own learning process. This means children cannot optimally develop 21st century skills, because this requires a learner-centred classroom with constructivist practices and authoritative teaching (e.g., Ro'iste et al., 2012; Walker, 2008). Thus, if the Mauritian government has a goal at macro level, namely maximum academic achievement and optimal development of the 21st century skills, the government has to allow room for change in the means used to achieve this goal. Educational policy and especially test and exam procedures have to be adjusted in order to cater for change in teaching style and classroom environments.

However, the first step in changing educational policy at macro level has been made already (Bronfenbrenner, 1979; Primary Curriculum Framework, 2015). The transition into the nine year-schooling system is a promising opportunity to make a transition at micro and meso level from the three R-type of education into a problem-posed, learner-centred educational system (Freire, 1979). The CPE will be eliminated, but the test and exam procedures during the nine years of primary education should also be taken into account. The test and exam procedures should not only focus on testing knowledge, but should also evaluate the development of attitudes and 21st century skills. This gives teachers the chance to make a transition from a banking model of education to problem-posed, learner centred education (Freire, 1979; Van `t Rood cs, 2015). Mauritian teachers endorse this need for change and their bottom-up support makes the implementation of the new system a unique opportunity to allow them to reshape their classroom environment. A practical guide on how to become a constructivist teacher could instigate this change (see Appendix I).

But changing only classroom environments will not be sufficient; the pedagogical climate outside of the school needs to be addressed as well. Parenting style namely is an important factor affecting primary school children's academic achievement at micro level (Bronfenbrenner, 1979; Masud et al., 2015), as is the existence of a PCS at meso level (Bronfenbrenner, 1979; De Winter, 2012). Especially for children in the disadvantaged community the authoritarian parenting style and the lack of a PCS neither contributes to

academic achievement, nor does it contribute to the development of 21st century skills (e.g., De Winter, 2012; Hilhorst & Zonneveld, 2013; Pinquart, 2015).

Especially in the disadvantaged areas, the PCS at meso level could be strengthened to adequately support child development, by focussing on stimulating parental involvement and increasing social capital (De Winter, 2012). In these deprived areas, where there is hardly any sense of community, the school offers the best prospect as the starting point where this change could begin (De Winter, 2012; Noguera, 2008). For example, in deprived and multi-ethnic areas in the United States schools were successfully transformed into centres of stability and support, by increasing parental involvement and involvement of the neighbourhood in the education of children (Noguera, 2008). This could serve as an example for Mauritius.

What Mauritius could learn from Noguera's approach is how to empower parents through active involvement in the school (Noguera, 2008). Through the school management, "offices of parent-relations" were created. These were meant to strengthen the bond between parents and between parents and the school. The PCS was strengthened because this office organised activities where parents could meet each other, and because activities in the neighbourhoods were undertaken to promote parental participation (De Winter, 2012; Noguera, 2008). Additionally, parents were given a voice in school management, for example by involving them in appointing new staff. What distinguishes this approach from other approaches to involve parents in the school, is that in this program the political character of social problems is not avoided. When social problems occur around the school, these are directly related to the social chances of children in the neighbourhood (De Winter, 2012). This is why these problems are discussed at school with parents in workshops or focus groups (Noguera, 2008). This makes parents feel they are part of the community, the school and the education of their children, which in turn could lead to better academic achievement of their children (McLoyd, 1998).

However, the active involvement of parents, or ownership, is not a matter of course; especially parents in Mauritius' disadvantaged areas are often not empowered (Sobhee. 2009; Sundman, 2000). Parents with a low level of education or with social or financial problems are not likely to consider the education of their children a priority (De Winter, 2012). But these are especially the parents for whom it is important to increase involvement in school in order to promote the academic achievement of their children (Noguera, 2008). To empower these parents, participatory adult learning with special attention for child rearing practices and

parenting style could be used (Nieuwboer & van `t Rood, 2016).

An example of a participatory adult learning program that could be implemented in Mauritius is the IDEAL-program (Nieuwboer & van `t Rood, 2016). In this participatory approach the daily life of the parents will be the starting point for learning and empowerment (Freire, 1979). Although performed on a small sample, research on this program showed an increased participation in society and improvement in parenting style. Parents practiced a more positive, effective parenting style after participation in this program (Nieuwboer & van `t Rood, 2016). This increase in social capital would, in turn, contribute to the development of their children, because practicing an authoritative parenting style is a prerequisite for optimal academic achievement and the development of the 21st century skills of their children (e.g., Brown & Iyengar, 2008; Pinquart, 2015).

Limitations

Although this baseline study has reached its aim, there were several unavoidable limitations. A consequence of the selection of participating schools by the MoES was that headmasters assumed the researchers would report to the MoES about the quality of their school. This might have consequences for the reliability of the findings, because researchers may not have seen actual day-to-day reality in the practices at each the school. Nevertheless, even observing a reality participants want the researchers to perceive is useful for this type of baseline research, because it still exposes underlying values, norms and beliefs about educating and parenting.

Another limitation that might decrease the reliability of this research is the use of self-reports. A consequence of the use of self-reports is that participants might have answered in a way they assumed was politically correct. This could introduce mistakes into the research if participants tried to present themselves in a socially accepted, positive manner. The researchers tried to prevent this by emphasising confidentiality and anonymity, and stayed true to this by making sure nothing in this research is reducible to a particular school or participant (Fisher & Katz, 2000). Moreover, the researchers used indirect statements (e.g.,“Other parents should use more force to get their children to behave”) instead of direct questions, which allowed the participants to formulate their values and opinions without having to reveal sensitive and personal information. This increased the likelihood that participants answered honestly, and therefore increases the possibility that the outcomes of this study reflect reality. Furthermore, the use of triangulation in the data-collection

techniques also increased the likelihood that the results are reliable.

One more limitation concerns the validity of this study. Because of the two month time-limit for data-collection, the research was only conducted on a small sample of Mauritius' population. The non-random convenience sample was selected by the MoES, which might decrease external validity of this research. The procedure of sample selection could have consequences for the generalisability of the findings, because the characteristics of the sample are perhaps not representative for the characteristics of Mauritius' population. However, effort was made by the MoES to create a representative sample by selecting schools in different districts throughout the island, with advantaged and disadvantaged backgrounds. Although this enabled the researchers to make a comparison between advantaged and disadvantaged communities, no schools in the most deprived areas participated. This could explain the few significant results in the comparative quantitative analysis. Therefore, to generalise the findings to the entire Mauritian population, the researchers recommend to repeat this research with a larger sample, including participants from the most deprived areas and the most privileged areas, to gain insight in possible differences at both ends of the spectrum.

However, because comparable findings were found in all districts of the five participating schools, it may be assumed that this is not a coincidence, and that these findings could also be found in other districts in Mauritius. Furthermore, the triangulation with mixed methods and different perspectives increases the reliability of the results (Thurmond, 2001). This strong basis, embedded in existing scientific techniques, may also indicate that similar results can be found when repeating this research with a larger, representative sample.

All in all, despite the limitations, the current study is the first in its kind in the context of Mauritius. The statements made by the international consultants in the Action Plan for TESP are now empirically founded. If Mauritius aims to become a knowledge based economy, steps have to be taken to create a pedagogical climate in which children can optimally develop into critical citizens that can adapt to the changing society. But the findings of this study also indicate another step has to be taken; not just provide children with quality education, but children should also be provided with a coherent, authoritative pedagogical climate where values, norms and practices of all socialization agents are aligned. Thus, not only education is an agent for change, also parents and the community are crucial in making the transition Mauritius aims at a success.

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References

Aunola, K., & Nurmi, J. (2004). Maternal affection moderates the impact of psychological control on a child's mathematical performance. *Developmental Psychology, 40*, 965–978. doi:10.1037/0012-1649.40.6.965

Baumrind, D. (1966). Effects of authoritative parental control on child behavior. *Child Development, 37,* 887-907. doi:10.2307/1126611

Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monograph, 4,* 1-103. doi:10.1037/h0030372

Bertelsmann Stiftung. (2014). *Mauritius Country Report. BTI 2014.* Gütersloh: Bertelsmann Stiftung.

Bhowon, U., & Bhowon-Ramsar, S. (2012). Voices of Indian diasporic grandparents in Mauritius. *Indian Diaspora, 720*, 27-43. doi:10.1007/978-94-6209-467-3_2

Boswell, R. (2006). *Le malaise Créole. Ethnic identity in Mauritius.* New York: Berghanh Books.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22,* 723-742. doi:0012-1649/86/S00.75

Bronfenbrenner, U. (1979). *The ecology of human development.* Cambridge: Harvard University Press.

Brown, L., & Iyengar, S. (2008). Parenting styles: The impact on student achievement. *Marriage & Family Review, 43*, 14-38. doi:10.1080/01494920802010140

Byrnes, H. F., & Miller, B. A. (2012). The Relationship Between Neighborhood Characteristics and Effective Parenting Behaviors. The Role of Social Support. *Journal of family issues*, *33*, 1658-1687. doi:10.1177/0192513X12437693

Carroll, B., & Carroll, T. (2008). Trouble in paradise: Ethnic conflict in Mauritius. *Commonwealth, 38,* 25-50. doi:10.1080/14662040008447817

Celestin-Westreich, S., & Celestin, L. -P. (2012). *Observeren en rapporteren.* Amsterdam: Pearson Benelux.

Cogan, J. J., & Derricott, R. (2012). *Citizenship for the 21st century. An international perspective on education.* New York: Taylor & Francis Group.

Coleman, J. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94,* 95-120. doi:0002-9602/89/9407-0010

Coleman, J. (1990). *Equality and achievement in education.* Boulder: Westview Press.

Darling, N., & Steinberg, L. (1993). Parenting style as context: An Integrative Model. *Psychological Bulletin, 113,* 487-496. doi:10.1037/0033-2909.113.3.487

De Winter, M. (2012). *Socialization and civil society. How parents, teachers and others could foster a democratic way of life.* Rotterdam: Sense Publishers.

De Winter, M., & Kroneman, M. (2003). *Participatief jeugdonderzoek. Sociaal wetenschappelijk onderzoek samen met kinderen en jongeren.* Assen: Van Gorcum.

Eisenhart, M. (2001). *Changing conceptions of culture and ethnographic methodology: Recent thematic shifts and their implications for research on teaching.* Washington DC: American Educational Research Association.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational psychology review*, *13*, 1-22. doi:10.1023/A:1009048817385

Fisher, R. J., & Katz, J. E. (2000). Social desirability bias and the validity of self-reported values. *Psychology & Marketing, 17,* 105-120. doi:10.1002/(SICI)1520-6793(200002)

Freire, P. (1979). *Pedagogy of the oppressed.* New York: Bloomsbury Publishing.

Gray, M. R., & Steinberg, L. (1999). Unpacking authoritative parenting: Reassessing a multidimensional construct. *Journal of Marriage and Family, 61*, 574–587. doi:10.2307/353561

Griffiths, M. (1998). *Stakeholders' voices: A socio-cultural approach to describing and extending an understanding of primary education in Mauritius.* Perth: Edith Cowan University.

Griffiths, M. (2000). Learning for all? Interrogating children's experiences of primary schooling in Mauritius. *Teaching and Teacher Education, 16,* 785-800. doi:10.1016/S0742-051X(00)00025-1

Harwood, R. L., Schölmerich, A., & Schulze, P. A. (2000). Homogeneity and heterogeneity in cultural belief systems. *New Directions for Child and Adolescent Development, 87,* 41-57. doi:10.1002/cd.23220008705

Hazzard, A. Christensen, A., & Margolin, G. (1983). Children's perceptions of parental behaviors. *Journal of Abnormal Child Psychology, 11,* 49-60. doi:0091-0627/83/0300-0049503.00/0

Hilhorst, P., & Zonneveld, M. (2013). *De gewoonste zaak van de wereld: Radicaal kiezen voor de pedagogische civil society*. Den Haag: Raad voor Maatschappelijke Ontwikkeling.

Hua Liu, C., & Matthews, R. (2005). Vygotsky's philosophy: Constructivism and its criticisms examined. *International Education Journal, 6,* 386-399. doi:0.1016/j.sbspro.2011.11.256

Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education, 40*, 237–269. doi:10.1177/0042085905274540

Jeynes, H. W. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education, 42*, 82–110. doi:10.1177/0042085906293818

Johnson, D. W., Johnson, R. T., & Stanne, M. B. (2000). *Cooperative learning methods: A meta-analysis.* Minneapolis: Cooperative Learning Centre at the University of Minnesota.

Johnson, B., & McClure, R. (2004). Validity and reliability of a shortened, revised version of the Constructivist Learning Environment Survey (CLES). *Learning Environments Research, 7,* 65-80. doi:10.1023/B:LERI.0000022279.89075.9f

Kumar, M. S., & Gurrib, M. A. (2008). Priority education zones in Mauritius. *Prospects, 28*, 227-235. doi:10.1007/s11125-008-9070-1

Kunstche, E., Gmel, G., & Rehm, J. (2006). The Swiss Teaching Style Questionnaire (STSQ) and adolescent problem behaviors. *The Swiss Journal of Psychology, 65,* 147-155. doi:10.1024/1421-0185.65.3.147

Laville, R. (2000). Can an ethnically-based civil society succeed? The case of Mauritius. *Journal of Contemporary African Studies, 18*, 7-20. doi:10.1080/025890000111940

Lee, J., Yu, H., & Choi, S. (2012). The influences of parental acceptance and parental control on school adjustment and academic achievement for South Korean children: The mediation role of self-regulation. *Asia Pacific Educational Review, 13*, 227–237. doi:10.1007/s12564-011-9186-5

Li, M. P., & Lam, B. H. (2005). *Cooperative learning.* Hong Kong: The Hong Kong Institute of Education.

Marzano, R. J., & Heflebower, T. (2012). *Teaching & assessing 21st century skills*. Bloomington: Solution Tree Press.

Masud, H., Thurasamy, R., & Ahmad, M. S. (2015). Parenting styles and academic achievement of young adolescents: A systematic literature review. *Quality and Quantity*, *49*, 2411-2433. doi:10.1007/s11135-014-0120-x

Mathison, S. (1988). Why triangulate? *Educational Researcher, 17,* 13-17. doi:10.3102/0013189X017002013

McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American psychologist*, *53,* 185-204. doi:10.1037/0003-066X.53.2.185

Ministry of Tertiary Education, Science, Research & Technology. (2013). *Tertiary Education Strategic Plan 2013-2025.* Ebène: Ministry of Education.

Ministry of Tertiary Education, Science, Research & Technology. (2015). *The national curriculum framework (primary).* Ebène: Ministry of Education.

Moritsugu, J., Vera, E., Wong, F. Y., & Duffy, K. G. (2014). *Community psychology.* New York: Taylor & Francis.

Nieuwboer, C., & Van `t Rood, R. (2016). Learning language that matters: A pedagogical method to support migrant mothers without formal education experience in their social integration in Western countries. *International Journal of Intercultural Relations, 51,* 29-40. doi:10.1016/j.ijintrel.2016.01.002

Nix, R. K., Fraser, B. J., & Ledbetter, C. E. (2005). Evaluating an integrated science learning environment using the Constructivist Learning Environment Survey. *Learning Environments Research, 8,* 109-133. doi:10.1007/s10984-005-7251-x

Noguera, P. (2008). *The trouble with black boys, and other reflections on race, equity and the future of public education.* New York: John Wiley & Sons.

Owodally, A. M. A. (2004). Maternal reports of home literacy experiences in multilingual Mauritius: A case study of pre-schoolers. *Early Child Development and Care, 184,* 16715-1635. doi:10.1080/03004430.2013.871274

Palincsar, A. S. (1998). Social constructivist perspectives on teaching and learning. *Annual Review of Psychology, 49,* 345-375. doi:10.1146/annurev.psych.49.1.345

Pinquart, M. (2015). Associations of parenting styles and dimensions with academic achievement in children and adolescents: A meta-analysis. *Educational Psychology Review, 27,* 1-19. doi:10.1007/s10648-015-9338-y

Ravtich, D., & Viteritti, J. (2002). *Making good citizens: Education and civil society.* New Haven: Yale University Press.

Reitman, D., Rhode, P. C., Hupp, S. D. A., & Altobello, C. (2002). Development and validation of the Parental Authority Questionnaire – Revised. *Journal of Psychopathology and Behavioral Assessment, 24,* 119-127. doi:10.1023/A:1015344909518

Ro'iste, A., Kelly, C., Molcho, M., Gavin, A., & Gabhainn, S. N. (2012). Is school participation good for children? Associations with health and well being. *Health Education, 112*, 88-105. doi:10.1108/09654281211203394

Rotherham, A. J., & Willingham, D. T. (2009). "21st-century" skills. Not new, but a worthy challenge. *American Educator, 17,* 16-21. Retrieved from http://www.aft.org/sites/default/files/periodicals/RotherhamWillingham.pdf

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research*, *75*, 417-453. doi: 10.3102/00346543075003417

Sobhee, S. K. (2009). The economic success of Mauritius: Lessons and policy options for Africa. *Journal of Economic Policy Reform, 12,* 29-42. doi:10.1080/17487870902739186

Sorkhabi, N. (2005). Applicability of Baumrind's parent typology to collective cultures: Analysis of cultural explanations of parent socialization effects. *International Journal of Behavioral Development, 29,* 552-563. doi:10.1177/01650250500172640

Sundman, M. -L. (2013). *The role of foreign direct investment in the development of Mauritius.* Gothenburg: University of Gothenburg.

Taylor, P. C., Fraser, B. J., & Fisher, D. L. (1997). Monitoring constructivist classroom learning environments. *International Journal of Educational Research, 27,* 293-302. doi:10.1016/S0883-0355(97)90011-2

Thurmond, V. A. (2001). The point of triangulation. *Journal of Nursing Scholarship, 33,* 253-258. doi:10.111/j.1547-5069.1001.00253.x

Van `t Rood, R. (1996). *An enriching perspective? Empowerment through basic education as a foundation for development.* Meppel: Edu'Actief.

Van `t Rood cs, R. (2015). *Consultancy services for the elaboration of an action plan for the Tertiary Education Strategic Plan 2013-2025. Final report.* Port Louis: European Union - PROMAN.

Voogt, J., & Roblin, N. P. (2010). *21st century skills. Discussienota*. Enschede: Universiteit Twente.

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes.* Cambridge: Harvard University Press.

Walker, J. M. T. (2008). Looking at teacher practices through the lens of parenting style. *The Journal of Experimental Education, 76,* 218-240. doi:10.3200/JEXE.76.2.218-240

White, K. R. (1982). The relation between socioeconomic status and academic achievement. *Psychological Bulletin*, *91,* 461-481. doi:10.1037/0033-2909.91.3.461

Appendix A. Topic List Interview with Headmaster

Interview with Headmaster

1. **Introduction:** short presentation about the research. Introducing topic, aim and scope of research and explain the goal and scope of this meeting.

2. **Introduction of headmaster**

3. **Start interview:** Now we are going to present a few statements and questions to you. We want to assure you there are no right or wrong answers; we are interested in hearing your honest opinion. Please feel free to say what is on your mind.

4. **Statement and questions:**

- In my school there is a strong sense of community; teachers, parents and other stakeholders share the responsibility of educating and socializing children.

- According to you, what is educational quality?

- Why do children go to school?

Appendix B. Topic List Interview with Teacher

Interview with Teacher

1. **Introduction:** short presentation about the research. Introducing topic, aim and scope of research and explain the goal and scope of this meeting.

2. **Statements:** *We are going to present statements to you. We want to assure you there are no right or wrong answers; we are interested in hearing your honest opinion. Please feel free to say what is on your mind, and to either agree or disagree with the statements. We might ask you more questions to get a clear understanding of your opinion.*

- I set down clearly defined rules which my pupils must obey.
- I explain to my pupils why I have asked them to do something.
- When I ask my students to do something, I expect it to be done immediately without any questions.
- I show the pupils that I care about them and that I am interested in them, not only when it comes to academic work.
- A class must be kept under control.
- I comfort my pupils when they are having difficulties.

- Learning in school should be related to students' daily life outside of school.
- In a classroom it should not be allowed for students to express their opinion if it differs from the teachers' opinion.
- It is important for a teacher to let students help decide what they are going to learn.
- I would rather have students come to me with questions about how to solve a mathematical problem instead of students asking other students.
- In my class, students learn that science is influenced by peoples cultural values and opinions.

3. **Final questions:**

- As a teacher, I feel a shared responsibility in raising my students together with their parents, other teachers and the community.
- How would you define quality education?

Appendix C. Topic List Focus Group with Parents

Focus Group with Parents

1. **Introduction:** short presentation about the research. Introducing topic, aim and scope of research and explain the goal and scope of this meeting. Hand out 'stroopwafels'.

2. **Introduction:** can you introduce yourself to us and could you tell us something about what your daily life with your family looks like?

3. **Statements:** *now we are going to present a few statements to you. We want to assure you there are no right or wrong answers; we are interested in hearing your honest opinions. The aim of this meeting is to construct a dialogue with the people around this table. Please feel free to say what is on your mind, and if you agree or disagree with the others. Each statement will refer to different ideas about parenting.*

    - When I ask my children to do something, I expect it to be done immediately without questions.
    - My children are free to make their own decisions about activities, even if I disagree.
    - I make family rules together with my children, and we discuss the reasons for these rules.
    - Other parents should use more force to get their children to behave.
    - As a parent, I feel a shared responsibility in raising my children together with the school, other parents and the community I live in.

4. **Final questions:**
    - What is the most important thing you as a parent could teach your children?
    - What is your dream for them when they are grown up?

Appendix D. Questionnaire on Teaching

Utrecht University

Questionnaire on Teaching in Mauritius

Dear teachers,

Thank you very much for taking the time to fill in this questionnaire.

We want to assure you there are no right or wrong answers. Try to fill in the questionnaire as honestly as possible. The results will be anonymous.

Please return this questionnaire to the headmaster before: ……...

What is your age?	
What is your gender?	*male / female*
Please describe your ethnicity	
How many years of teaching experience do you have?	
Which class(es) do you teach?	

The next items will be statements. Please select the answer that best describes your beliefs about teaching. We are looking for your overall impression regarding each statement. Please colour or circle your answer for each statement.

I comfort my pupils when they are having difficulties				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I regularly check their homework				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I have a good relationship with my pupils				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

A class must be kept under control				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I congratulate them when they have done something well				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I can abandon the idea of doing something to please the class				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I respect them and expect the same in return				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I have established routines / rules for how the pupils are supposed to act in plenary teaching sessions				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I explain to my pupils why I have asked them to do something				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I set down clearly defined rules which my pupils must obey				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I expect them to keep their things tidy				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I encourage them when they score badly				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I am easily enraged if a student does not do what I say				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I am there for my pupils if they need help				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

A class must be obedient				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I am closely monitoring the pupils behaviour in class				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I show interest in each pupil				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I am disappointed and angry when they behave badly				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I work actively to create good relationships with my pupils				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I show the pupils that I care about them, not only when it comes to academic work				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I have established routines / rules for how the pupils are supposed to act when they change activity / workplace etc.				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I value my pupils opinion even if it differs from mine				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I have established routines / rules for individual work				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I demand good results from my students				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

The following questions are about the learning environment in your classroom.

In this class students learn about the world inside and outside of school				
Almost never	Seldom	Sometimes	Often	Almost always

In this class new learning relates to experiences or questions about the world inside and outside of school				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students learn how science is a part of their inside and outside of school lives				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students learn interesting things about the world inside and outside of school				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students learn that science cannot always provide answers to problems				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students learn that scientific explanations have changed over time				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students learn that science is influenced by people's cultural values and opinions				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students learn that science is a way to raise questions and seek answers				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students feel safe questioning what or how they are being taught				
Almost never	Seldom	Sometimes	Often	Almost always

In this class, I feel students learn better when they are allowed to questions what or how they are being taught				
Almost never	Seldom	Sometimes	Often	Almost always

In this class it is acceptable for students ask for clarification about activities that are confusing to them				
Almost never	Seldom	Sometimes	Often	Almost always

In this class it is acceptable for students to express concern about anything that gets in the way of their learning				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students help me plan what they are going to learn				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students help me to decide how well they are learning				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students help me to decide which activities work best for them				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students let me know if they need more / less time to complete an activity				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students talk with other students about how to solve problems				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students explain their ideas to other students				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students ask other students to explain their ideas				
Almost never	Seldom	Sometimes	Often	Almost always

In this class students are asked by other students to explain their ideas				
Almost never	Seldom	Sometimes	Often	Almost always

The questions were easy to understand				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

It was hard to answer the questions				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Is there anything else you would like to share?

Thank you for your time and effort!

Appendix E. Questionnaire on Parenting

Utrecht University

Questionnaire on Parenting in Mauritius

Dear parents,

Thank you very much for taking the time to fill in this questionnaire.

We want to assure you there are no right or wrong answers. Try to fill in the questionnaire as honestly as possible. The results will be anonymous.

Please return this questionnaire to the Standard V teacher before: ……...

What is your age?	
What is your gender?	*male / female*
Please describe your ethnicity	
What is the highest level of education you have completed?	
What is your current occupation?	
What is your current relationship status?	*Married / Widowed / Divorced / Separated / Domestic partnership / Single*
How would you describe your income?	*below the Mauritian average / average / above average*
How many children do you have?	
What is the gender of your children?	
What is the age of your children?	

The next items will be statements. Please select the answer that best describes your beliefs about child rearing. We are looking for your overall impression regarding each statement. Please colour or circle your answer for each statement.

It is for my children's own good to require them to do what I think is right, even if they don't agree				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

When I ask my children to do something, I expect it to be done immediately without questions				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Once family rules have been made, I discuss the reasons for these rules with my children				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I always encourage discussion when children feel family rules and restrictions are unfair				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I do not allow my children to question the decisions that I make				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I direct the activities and decisions of my children by talking with them and using rewards and punishments				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Other parents should use more force to get their children to behave				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

My children know what I expect from them, but feel free to talk to me if they feel my expectations are unfair				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Smart parents should teach their children early exactly who is the boss in the family				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I tell my children what they should do, but I explain why I want them to do it				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I let my children know what behaviour is expected and if they don't follow the rules they get punished				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I listen to my children when making decisions, but I do not decide something simply because my children want it				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I have clear standards of behaviour for my children, but I am willing to listen to their concerns and discuss the rules with them				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I allow my children to form their own opinions about family matters and let them make their own decisions about those matters				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Most problems in society could be solved if parents were stricter when their children disobey				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I often tell my children exactly what I want them to do and how I expect them to do it				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

I set firm guidelines for my children but am understanding when they disagree with me				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

My children do not need to obey rules simple because people in authority have told them to				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

My children know what I expect of them and do what is asked simply out of respect for my authority				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

If I make a decision that hurts my children, I am willing to admit that I have made a mistake				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

The questions were easy to understand				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

It was hard to answer the questions				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Is there anything else you would like to share?

Thank you for your time and effort!

Appendix F. Questionnaire for Primary School Students

Utrecht University

Questionnaire for Primary School Students in Mauritius

Dear students,

Thank you very much for taking the time to fill in this questionnaire.

We want to assure you there are no right or wrong answers. Try to fill in the questionnaire as honest as possible. The results will be anonymous.

The first four questions are about you.

What is your age?	
I am a …	*boy / girl*
Please describe your ethnicity	
What do you want to become when you grow up?	

The next questions are about your school. Please colour your answer for each statement.

In this class I learn about the world inside and outside of school				
Almost never	Seldom	Sometimes	Often	Almost always

In this class I learn interesting things about the world inside and outside of school				
Almost never	Seldom	Sometimes	Often	Almost always

If I have a question, the teacher gives me the answer				
Almost never	Seldom	Sometimes	Often	Almost always

If I have a question, the teacher helps me to find the answer myself				
Almost never	Seldom	Sometimes	Often	Almost always

I dare to ask the teacher why we learn the things we learn				
Almost never	Seldom	Sometimes	Often	Almost always

In this class I feel safe enough to express myself when something is bothering me				
Almost never	Seldom	Sometimes	Often	Almost always

In this class I can help decide what we are learning				
Almost never	Seldom	Sometimes	Often	Almost always

If I need more time to complete an activity, I feel safe enough to ask my teacher for more time

Almost never	Seldom	Sometimes	Often	Almost always

In this class I talk with other students about how to solve problems				
Almost never	Seldom	Sometimes	Often	Almost always

If I have an idea, there is an opportunity to explain this idea to other students				
Almost never	Seldom	Sometimes	Often	Almost always

The next questions are about your parents. We would like to know how your mom and dad do certain things at home. We will not talk to your parents about this, it is anonymous. Please colour your answer for each statement.

My parents tell me when they like what I do				
Never	A little	Sometimes	Pretty much	A lot

My parents talk and listen to me, I can have a good conversation with them				
Never	A little	Sometimes	Pretty much	A lot

My parents give me commands, they tell me what to do				
Never	A little	Sometimes	Pretty much	A lot

My parents tell me that I'm no good when I did something wrong				
Never	A little	Sometimes	Pretty much	A lot

My parents let me help decide what we do at home				
Never	A little	Sometimes	Pretty much	A lot

When I did something wrong my parents punish me				
Never	A little	Sometimes	Pretty much	A lot

Sometimes my parents ignore me when they think I behaved bad				
Never	A little	Sometimes	Pretty much	A lot

My parents let me do things on my own				
Never	A little	Sometimes	Pretty much	A lot

The questions were easy to understand				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

It was hard to answer the questions				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Is there anything else you would like to share?

Thank you for your time and effort!

Appendix G. Table 3

Table 3

Classroom Observations on Constructivist Practices and Teaching Style

		Observation								
Category	Label	1	2	3	4	5	6	7	8	9
Setting	Disadvantaged (D) / advantaged community (A)	A	A	A	A	D	D	D	D	D
	Amount pupils	40	42	39	30	31	32	38	13	15
Constructivist practices	Personal relevance		X		X	X				
	Topics are relevant to pupils									
	Critical voice					X				
	Pupil is enabled to think critically and can express opinion									
	Shared control				X	X	X			
	Appropriate influence, impact and participation									
	Student negotiation				X	X	X		X	
	Peer interaction for problem solving									
	Uncertainty				X	X				
	Stimulate creative and innovative thinking									
	Total	0	1	0	4	5	2	0	1	0
Authoritarian Teacher-centred	Focus on repetition instead of understanding	X	X				X	X	X	X
	No differentiation between pupils	X	X	X			X	X	X	
	Teaching the class, not the individual	X	X					X	X	
	Harsh control							X		
	No content-related peer interaction	X	X	X			X	X	X	X
	Total	4	4	2	0	0	3	5	4	2
Authoritative Child-centred	Focus on understanding the knowledge			X	X	X				
	Differentiate between pupils in lesson				X	X				X
	Teaching the class and the individual			X	X	X	X			X
	Warmth	X	X	X	X	X	X		X	X
	Content-related peer interaction				X	X				
	Total	1	1	3	5	5	2	0	1	3

Appendix H. Examples of Students' Drawings

Figure 1. Classified as predominantly authoritarian

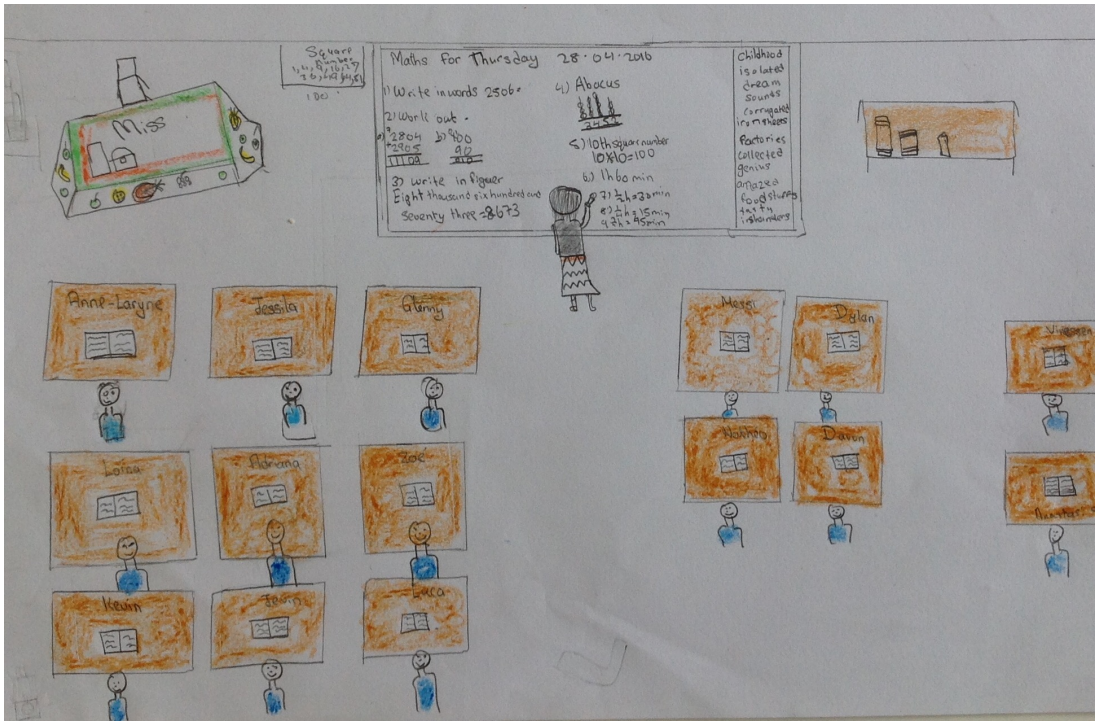


Figure 2. Classified as predominantly authoritarian

Figure 3. Classified as predominantly authoritarian

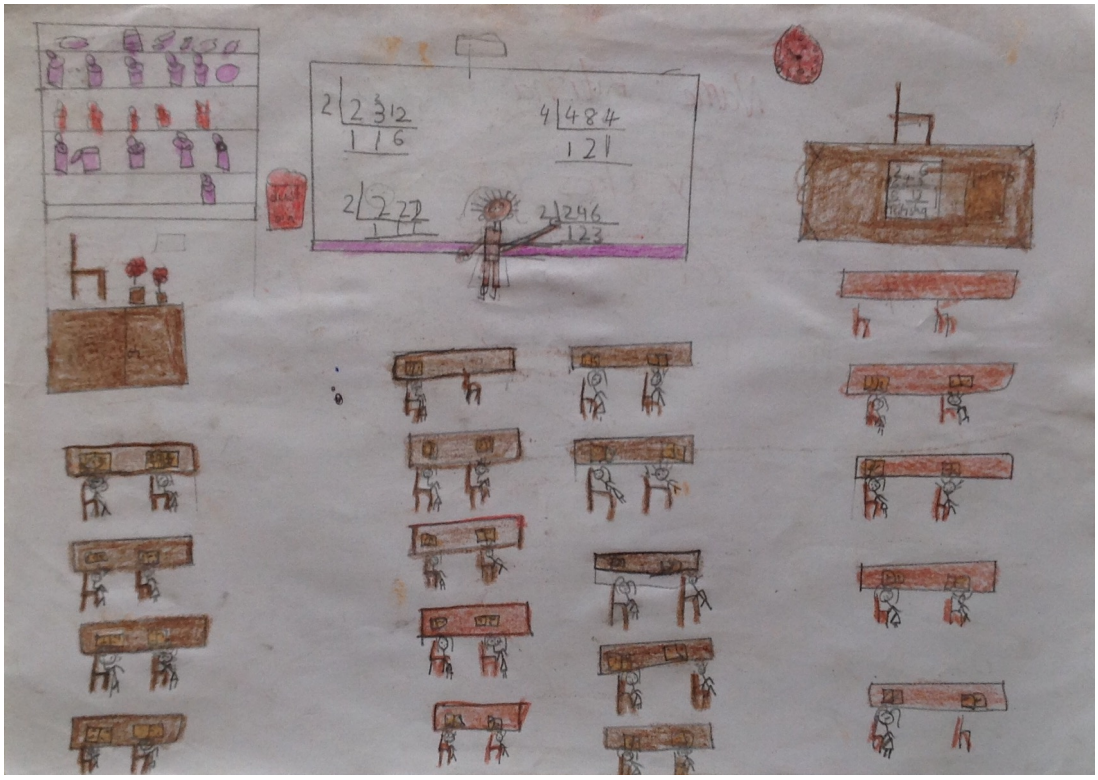


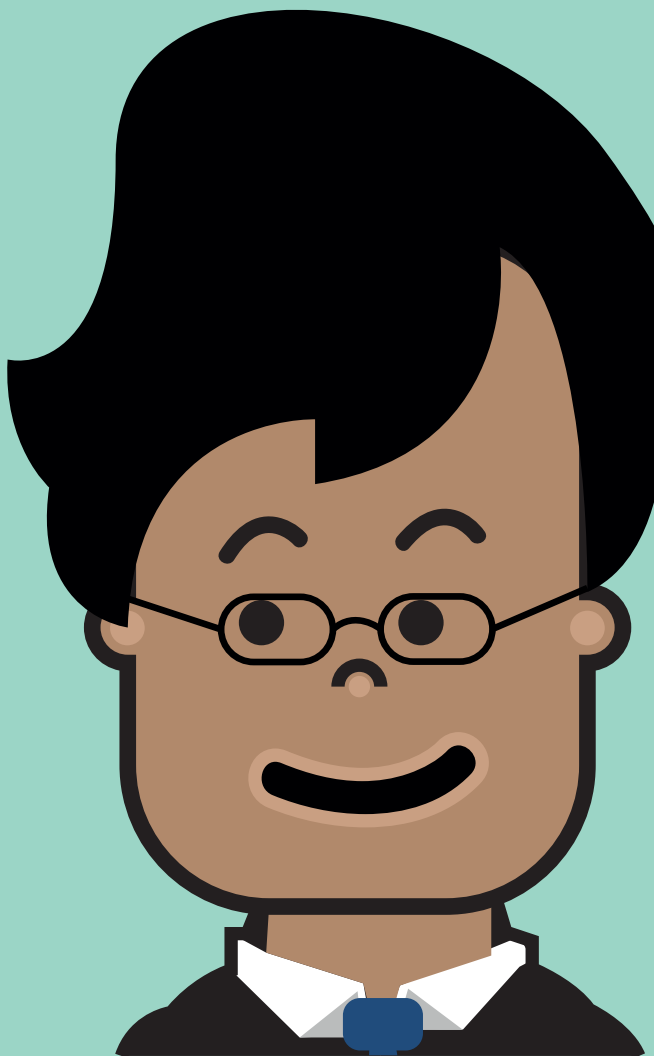
Figure 4. Classified as predominantly authoritative

Appendix I. How to Become a Constructivist Teacher?

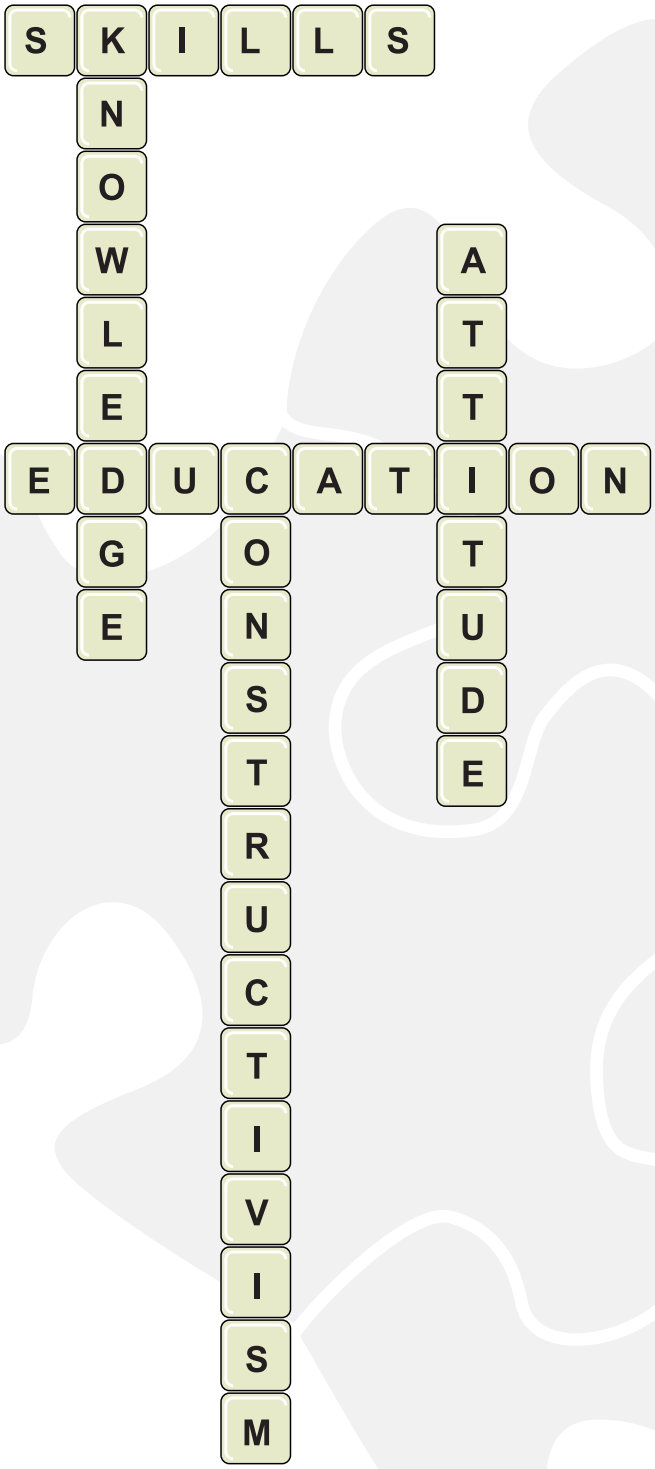
Based on the outcomes of this research, the research team designed informational material for teachers and the Ministry of Education and Human Resources, Tertiary Education and Scientific Knowledge, to thank them for their participation and cooperation.

The Road Of Learning Is Always Under Construction.

How to become a *constructivist teacher*?



First, Scrabble...



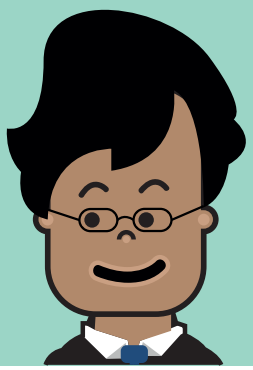
Dear teacher,

We live in a rapidly changing world. As you know, education is also making a transition from traditional, teacher-centred education into modern education. Modern education enables students to develop skills for continuous learning throughout life; modern education *empowers* the new generation.

To promote knowledge, skills and attitudes that contribute to lifelong learning, research demonstrates education should take a constructivist approach.

With this, we want to guide you on your pathway to becoming a constructivist teacher.

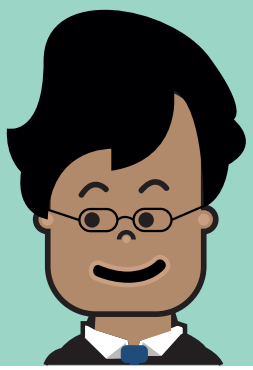
So, tell me, why Constructivism?



Constructivist classrooms foster critical, motivated and independent students.

As the large body of scientific research suggests, the application of constructivist learning in schools is a promising approach to achieve higher academic performance, empowerment and critical citizenship. These are skills necessary for adapting to our globalizing world.

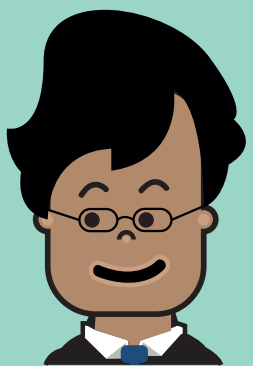
Ok, Sounds nice. But, what actually *is* Constructivism?



Constructivist methodology arises from the belief in cooperative learning. As the term 'constructivism' implies, learners *construct* knowledge through experience and social interaction. According to the patriarch of modern social constructivism Lev Vygotsky (1896-1934), the social interactions between learners and their environments is a key factor for development.

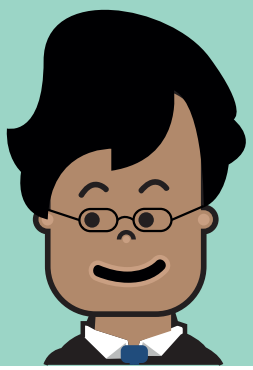
Vygotsky assumes the development of individuals is a result of culture and the societal context, where learners are active participants in their process of learning, while constructing knowledge in cooperation with others. Meaningful learning occurs when your students are actively involved in their learning process, constructing knowledge together, under your supervision.

Ok. Sounds nice. But, what actually *is* Constructivism?



All students can achieve their own personal goals if, and only if, they take responsibility for the learning process of themselves and the learning processes of the other group members. Their cognitive analysis, reflection and synthesis skills are challenged through this problem-posed cooperative learning. Thus, according to social constructivist theories, social and individual processes in the co-construction of knowledge are interdependent.

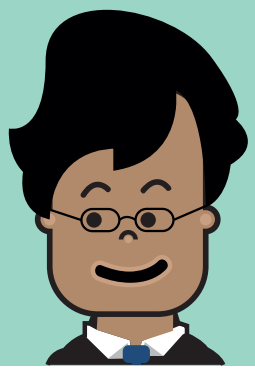
Still vague... How can I make my classroom constructivist?



In the context of a primary school, practicing constructivism means cooperative learning in a student-centred classroom.

Your role as a teacher, especially the interaction with your students, might be the most crucial factor in providing your students with a quality constructivist climate. As a constructivist teacher, it is your responsibility to facilitate a democratic, interactive learning process. This will inspire your students to be active, responsible and autonomous participants in their own learning process.

Enough theory. Now tell me, how do *I* do this?



It is important to notice that constructivism is a teaching *approach*, not a series of lessons or a strict curriculum. You can apply constructivism in every lesson you give, inside and outside of the curriculum.

It is not as overwhelming as you might think. You can distinguish your constructivist classroom from a traditional classroom by the following assets:

- Personal Relevance
- Critical Voice
- Shared Control
- Student Negotiation
- Uncertainty

With these, you can experiment in your own classroom. You will become a mediator of students and their environment, and this will help you step away from the role as a giver of information and manager of behaviour.

Personal Relevance

'Personal Relevance' refers to the relevance of learning to the lives of the learner. If the topics covered are relevant to your students, this results in an enhanced motivation and therefore in higher academic achievement. To achieve 'Personal Relevance' in a classroom, learning should be related to students' everyday out of school experiences.

"Knowing occurs by a process of construction by the knower"

To facilitate this process of construction, it will help if the perceptions of your students have a central position in your classroom. The best means to achieve this is interaction; pursue dialogue with your students. The outcomes of dialogue will enable you to adapt your lessons to your students' perspectives, which will make your lessons of personal relevance to them.

Personal Relevance

- **Ask open-ended questions and give students time to think about their answers**
- **Show interest in each student, not only when it comes to their academic work**
- **Encourage students to start a dialogue relevant to their everyday out of school experiences; both with you and with their peers**

Critical Voice

'Critical Voice' refers to the legitimacy of expressing a critical opinion in your classroom. If a student is enabled to think critically of a given situation in the classroom and gets an opportunity to express their substantiated opinion, this contributes to active and critical citizenship. This in turn contributes to democratic skills and empowerment of the learner.

To achieve 'Critical Voice', your students, however young they are, must feel it is legitimate and beneficial to question teachers' pedagogical approaches, teaching plans and learning methods. This does not mean they can determine what is being taught, but it will enable them to become democratic citizens who dare to question the *status quo*.

Critical Voice

- **Explain to your students why you have asked them to do something**
- **Value students' opinions explicitly, even if they differ from yours**
- **Show interest in each students' opinion and encourage them to formulate and express these opinions**

Shared Control within a Democratic Classroom

'Shared Control' refers to the participation of students in planning, conduct and assessment of learning. If students have appropriate influence and impact in their schools and classroom, this might lead to higher perceptions of student involvement. Student involvement, in turn, is strongly related to school satisfaction and with this to academic achievement. To achieve 'Shared Control', students must have opportunities to explain and justify their ideas and to test the viability of their own and other students' ideas.

Since student empowerment is at the centre of constructivist philosophy, the power structure in the classroom should be democratic; sharing power is a key element in a constructivist classroom.

Shared Control within a Democratic Classroom

In a constructivist classroom, a teacher uses an indirect form of control; by giving students the chance to experiment with responsibility, autonomy and self-control you allow your students to take control over their own thinking.

- **Compose a series of class rules in collaboration with your students**
- **Focus on students' learning rather than on teacher performance**
- **Enable students to exchange ideas and opinions about relevant topics in plenary classroom sessions**

Student Negotiation

'Student Negotiation' refers to student involvement with teachers and peers in assessing the viability of new ideas. The approach of constructivism encourages the social connections between students. This is strongly related to school satisfaction and therefore contributes to academic achievement. To enhance social connections and to achieve 'Student Negotiation', students negotiate with their teacher and peers in the design and management of learning activities and the social norms of the classroom.

'Student Negotiation' unites you as a teacher with your students in a common purpose. If a teacher can step away from the common practice of telling students what to do, they invite their students to be a part of the process of gaining knowledge.

Student Negotiation

If students feel they are a part of the educational decision-making, they will work harder. Furthermore, if students are participating, asking questions and discovering ideas in interaction, their learning process will gain meaning to them. Ownership and commitment arising from this will contribute to both empowerment and an active role in their own learning process.

- **Give students options and choices in assignments**
- **Set clear boundaries; what are the non-negotiable requirements of your lessons?**
- **Invite students to solve problems together; this will help them *learn how to learn***

Uncertainty

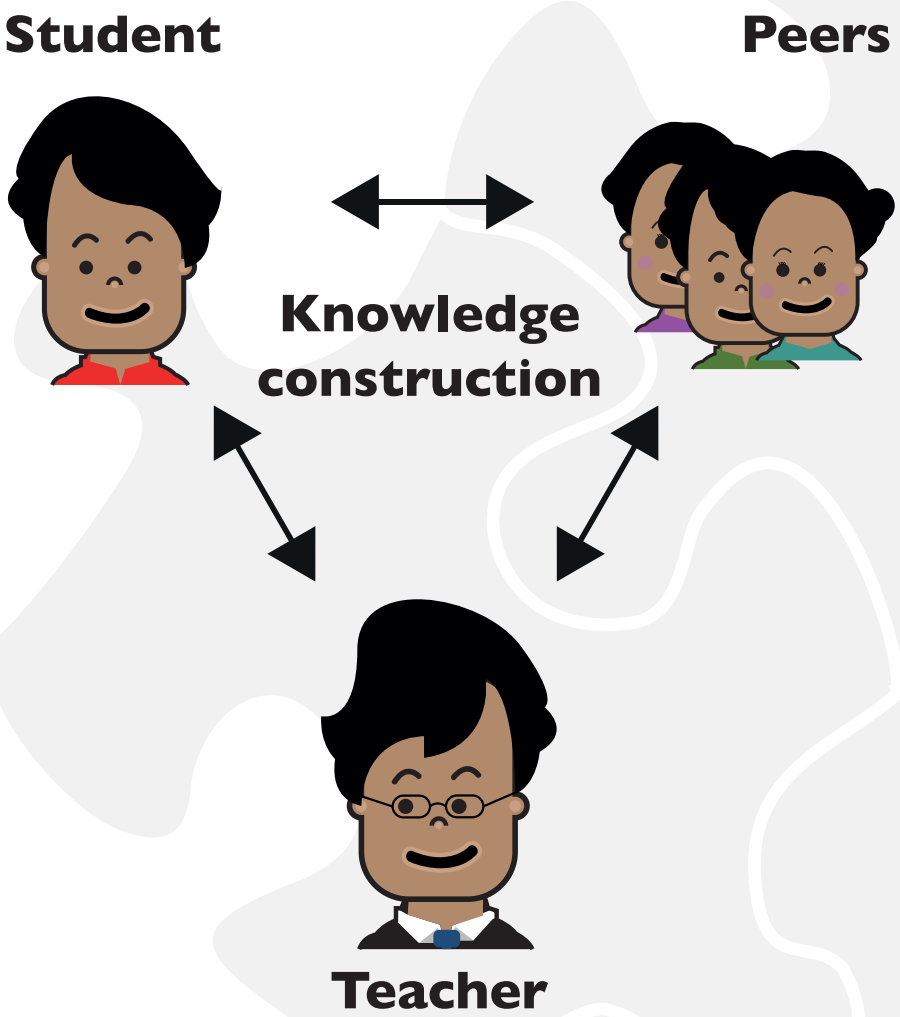
'Uncertainty' refers to the provisional status of scientific knowledge. Decisions in today's changing society are no longer black or white, or right or wrong. The abilities of innovative critical thinking about the bigger societal picture and developing creative problem-solving skills are a requirement for success in a modern, knowledge driven society. To achieve 'Uncertainty', students must learn that knowledge is evolving and culturally and socially determined.

Unlike mathematics, in many other aspects of education, 'truth' is a subjective concept. One of the most important things in socializing primary school children is the acceptance of diversity. You are one of the most important adults in the life of your student, and you can help them to gain respect for differences in cultures, people and their values and opinions.

Uncertainty

- **Pay explicit attention to the beauty in differences and similarities between children**
- **Be a role model to your students in valuing every students' uniqueness**
- **Show pupils there are different ways to solve problems, and different ways of interpreting and understanding the world**

Thus,



Thus,

From a constructivist point of view, teaching and researching are synonyms.

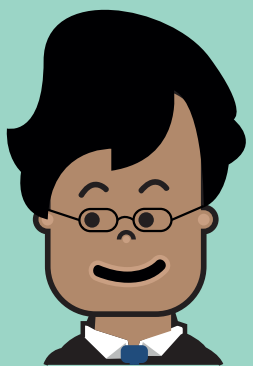
Watch. Listen. Ask. Learn.

You will receive this in return; it is a circular process.

Make student empowerment the centre of your teaching philosophy. Do everything in your power to provide students with the necessary skills and abilities to be lifelong, autonomous and empowered learners. Contribute to the development of active citizens, who will be able to take control over their own life, learning and resources when they grow up.

From a constructivist point of view, it is not only knowledge that counts. First and foremost, focus on contributing to the development of skills and attitudes in your students. They are the future, after all.

I want to learn more. What terms should I Google?



- Lev Vygotsky - Social Constructivism
- Paulo Freire - Problem Posed Education
- Jean Piaget - Theory of Constructivism
- John Dewey - Directed Living
- Zone of Proximal Development
- Scaffolding
- Cooperative learning
- Dialogical process
- Democratic classroom
- Learning as experience
- Discovery learning

Literature

Brooks, J. G. & Brooks, M. G. (1999). *In search of understanding: The case for constructivist classrooms, revised edition.*

Freire, P. (1979). *Pedagogy of the oppressed.*

Gray, A. (1997). *Constructivist teaching and learning.*

Hua Liu, C. & Matthews, R. (2005). *Vygotsky's philosophy: Constructivism and its criticisms examined.*

Johnson, D. W., Johnson, R. T., & Stanne, M. B. (2000). *Cooperative learning methods: a meta-analysis.*

Johnson, B. & McClure, R. (2004). *Validity and reliability of a shortened, revised version of the Constructivist Learning Environment Survey (CLES).*

Li, M. P. & Lam, B. H. (2005). *Cooperative learning.*

Nix, R. K., Fraser, B. J., & Ledbetter, C. E. (2005). *Evaluating an integrated science learning environment using the Constructivist Learning Environment Survey.*

Palincsar, A. S. (1998). *Social constructivist perspectives on teaching and learning.*

Ro'iste, A., Kelly, C., Molcho, M., Gavin, A., & Nic Gabhainn, S. (2012). *Is school participation good for children? Associations with health and well being.*

Taylor, P. C., Fraser, B. J., & Fisher, D. L. (1997). *Monitoring constructivist classroom learning environments.*

Van 't Rood, R. (1996). *An enriching perspective? Empowerment through basic education as a foundation for development.*

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes.*

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